

Investigating Absorptive Capacity in Boards, Corporate Governance and the Value Creating Board

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A thesis submitted in partial fulfilment of the requirements of the University of
Wolverhampton for the degree of Doctor of Philosophy

May 2013

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Abstract

Within corporate governance research, boards of directors constitute an essential part and are described as "the apex of the internal control system" (Jensen, 1993, p.862). Several stands of research have investigated whether, and to which degree, boards' composition, structure and processes have impact on board task performance, but board processes and specifically the use of knowledge and skills have not been thoroughly researched, yet. Simultaneously, there is a gap within organisational behaviour research on how knowledge is explored, transformed and exploited, which is conceptualised as absorptive capacity. Further, the concept of absorptive capacity has so to date not been researched in a board context. In this thesis board processes are studied by exploring the impact of absorptive capacity on board task performance. Three dimensions of absorptive capacity, exploratory learning, transformative learning and exploitative learning, are used in the analyses. The research is conducted using mixed methods (based on a survey and a case study). A quantitative analysis is based on the Norwegian Value Creating Board Survey, and a case study is conducted based on records, observations from board meetings and interviews in the Norwegian health company Healthy.

The findings show that the three dimensions of absorptive capacity, positively and significantly, mediate the relation between presence of knowledge and skills and board task performance. Complementarities between the three learning processes exist with the result that the three learning processes together are a stronger mediator than a single process.

The qualitative findings show that 1) information flows have an impact on absorptive capacity, 2) that the role and power of the CEO and the division of labour between the CEO and the chair, might have an impact on board task performance and 3) that a comprehensive utilisation of consensus has an impact on transformative and exploitative learning, 4) that effort norms are positively correlated to use of knowledge and skills and 5) that activation triggers have impacts on the learning processes.

The research contributes to theory with an extended application of the concept of absorptive capacity to boards, responding to calls from researchers to conduct new and more extensive research to analyse and integrate the concept. The thesis further contributes by shedding new light on learning processes in boards, underpinning former conceptual models. In the case study several findings are reported which are presented in an extended and modified model of determinants of board tasks. Finally, this thesis contributes to mixed methods research in boards.

The findings have implications for board practice with regard to board selections, board evaluations and learning processes in boards. Corporate governance codes should be aligned with these findings.

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Acknowledgements

When writing this thesis, learning processes have been a part of my life in two different ways. First, this thesis has its main focus on absorptive capacity with three learning processes: exploratory, transformative and exploitative learning.

Second, I have experienced the same learning processes in my own life. Writing a thesis is actually about exploring new knowledge, transforming this knowledge at an individual level and eventually exploiting the new knowledge.

A PhD is often described as journey. This journey has given me the opportunity to develop academically, which I have dreamed of since I finished my University degree years ago.

First, I would like to thank my supervisors, Silke Machold and Morten Huse for all their help and advices.

Further, I would like to thank my family – my husband Øystein and our four children Steinar, Kjersti Helene, Mariann and Bjørnar. They have always been there for me with their support, even encouraged me to go on when needed.

I. Introduction

1.1. Research outline

Corporate governance plays an important role at various business levels in most countries. The topic spans a wide range from ethical codes in society to actual behaviour in companies. Research on corporate governance was mainly initiated in the nineteen seventies, and several research reports have been developed from that time onwards. Many definitions of the concept have been derived, explained and employed (Cadbury, 1992; OECD, 2004). There are definitions that define corporate governance mainly in terms of control, either from a narrow shareholder or from a wider stakeholder perspective (Jensen & Meckling, 1976; Freeman, 1984). Other definitions are more inclusive, because the governance structure is related to boards and value creation (Daily, Dalton & Canella, 2003; Huse, 2007). In this thesis I will use the one by Huse (2007). He defines corporate governance as "the interactions between various internal and external actors and board members in directing a firm for value creation" (Huse, 2007, p.15).

Within corporate governance research, boards of directors constitute an essential part and are described as "the apex of the internal control system" (Jensen, 1993, p.862). Several stands of research have investigated whether, and to which degree, boards' composition, structure and processes have impact on board task performance. During the last forty years the research has developed from the idea that directors of boards were mainly rubber stampers for the management (Mace, 1971) to recent research where processes and team approaches are employed theoretically and methodologically to look inside the board room.

Furthermore, production and services in general have become more knowledge based as a result of extended education. At the same time, globalisation has increased the level and speed of connections between actors in global business, economics and politics, making connections between countries smaller. Internet and data opportunities are causes of an increased and

faster information exchange. As a consequence companies in all parts of the world face a new and extended challenge when it comes to knowledge development and sharing. It is no longer simply a question of whether knowledge and skills are present, but how they are used. Prior approaches of utilising and developing the knowledge are jeopardised. Within board research, Forbes and Milliken (1999) described three board processes of importance to board task performance “use of knowledge and skills”, “effort norms” and “cognitive conflicts”. These processes are proposed to be important because such processes can “disentangle the predictions offered by multiple theoretical perspectives with regard to board demography” (Forbes & Milliken, 1999, p.491). More specifically, the authors propose use of knowledge and skills to be of importance to determine group effectiveness.

Dynamic capabilities and more specifically, absorptive capacity, contribute in this context by explaining why and how knowledge and information should be obtained and used within companies today. Dynamic capabilities have been defined as “the firm’s abilities to integrate, build and reconfigure internal and external competences to address rapidly changing environments” (Teece, Pisano & Shuen, 1997, p.516). Absorptive capacity is defined as one of several dynamic capabilities, being the ability to explore new information and knowledge, transform it and exploit it in a commercial way (Cohen & Levinthal, 1989, 1990; Lane, Koka & Pathak, 2006; Todorova & Durisin, 2007; Volberda, Foss & Lyles, 2010; Zahra & George, 2002). The “use of knowledge and skills” process in boards as suggested by Forbes and Milliken (1999), and the antecedents proposed when conceptualising absorptive capacity, are thus similar. As a result, absorptive capacity should be a tool of analysing the process related to “use of knowledge and skills” in boards.

This thesis contributes in this tradition by developing and testing a model, derived from the seminal work of Forbes and Milliken (1999), examining how use of knowledge and skills works in boards when analysed by an absorptive capacity approach (Cohen & Levinthal,

1988, 1989; Lane et al, 2006; Todorova & Durisin, 2007; Volberda et al, 2010; Zahra & George, 2002). Quantitative and qualitative methods are employed with the aim of analysing the subject using statistical data and an in depth case study towards and within the board room.

1.2. Justification for research and contribution to knowledge

Traditionally, corporate governance research was dominated by agency approaches (Fama & Jensen, 198; Jensen & Meckling, 1976), complemented by stakeholder theory (Freeman, 1984), stewardship theory (Davis, Schoorman & Donaldson, 1997; Muth & Donaldson, 1998), resource dependence theory (Pfeffer, 1972) and the resource based view of the firm (Wernerfelt, 1984). While Mace (1971) focused on the dominance of management vis-a-vis boards in companies, later research focused on input-output models to explain board performance by “the usual suspects” (Finkelstein & Mooney, 2003). This research met a stream of criticism, proposing that processes in boards could not be explained by board characteristics and composition (Daily et al, 2003; Finkelstein & Mooney, 2003; Forbes & Milliken, 1999; Huse, 2007; Roberts, McNulty & Stiles, 2005). Several researchers (Daily et al, 2003; Pye & Pettigrew, 2005; Huse, 2005) called for other approaches to corporate governance and board research. Thus, despite a long and extensive research tradition in corporate governance, no single theory explained corporate governance in general, and more specifically how board processes could be described and understood.

In recent years, research has moved away from traditional studies examining the impact of board attributes on firm performance towards a greater interest in process studies. The impact of processes and behaviours in the board room on board task performance has been analysed, contributing with new knowledge on board activities (Machold, Huse, Minichilli & Nordqvist, 2011; Minichilli, Zattoni, Nielsen & Huse, 2012; Van Ees, Gabrielsson & Huse, 2009; Wan & Ong, 2005; Zattoni, Gnan, & Huse, 2012; Zona & Zattoni, 2007).

However, there are still calls for further studies in this context. Recently, Zattoni et al (2012) urged researchers to operate beyond simple input–output models and to explore the critical role played by board internal processes and tasks. Machold et al (2011) encouraged further research in the board process tradition in combination with that of the literature on team and entrepreneurial learning. Minichilli et al (2012) recommended future studies to include longitudinal designs and data from other countries. Furthermore, Lane et al. (2006) and Volberda et al (2010) encouraged scholars not only to build theory in relation to absorptive capacity, but to explore and test the construct in non-R&D contexts. Finally, several stands of research call for qualitative approaches (McNulty, Zattoni & Douglas, 2013) and combinations of quantitative and qualitative studies (Eisenhardt & Graebner, 2007; Pettigrew, 2013).

This thesis contributes to this agenda, continuing studies of board processes by exploring the impact of use of knowledge and skills on board task performance. The research is conducted using a survey and a case study.

Building on models of board task performance (Zahra & Pearce, 1989), I apply absorptive capacity to boards and argue that absorptive capacity mediates the relationship between presence of knowledge and skills and board task performance. From the extant literature, a model is derived, and hypotheses of the research are defined. Quantitative analyses are conducted based on a Norwegian survey (“The Value Creating Board”) (Huse, 2009). Structural Equation Modelling and regression analyses are employed to test the model. A case study approach is applied in the qualitative study in order to develop a deeper understanding of the model. This study is based on observations from board meetings, interviews and written information from board activities in Healthy, one of four large health companies in Norway. The constant, comparative method is used in the case study. As a result, a modified and extended model is derived.

All research is based on one or several research questions. The research questions in this thesis are: **"What is the effect of absorptive capacity on board task performance? How can the effect of absorptive capacity on board task performance be described and explained?"** The first question will be analysed by the quantitative study, while the second question will be analysed by the qualitative approach (case study).

Both analyses are linked to a Norwegian context for several reasons. Norwegian boards are active (Haalien & Huse, 2005) and are therefore interesting as a research setting. At the same time, the Norwegian context has similarities with most other European countries, which makes the analyses of interest to international scholars. Furthermore, the opportunity of data collection and analyses of a company and a board with an extensive public interest (Healthy) was available. Finally, Norway is my home country, and an existing study of the value creating board was present there when I started my PhD. Norwegian board regulations and practice are further presented in chapter III.

The contribution to knowledge of this research is:

- The findings show that all three dimensions of absorptive capacity (exploratory, transformative and exploitative learning (Lane et al, 2006)), positively and significantly mediate the relationship between presence of knowledge and skills and the three board tasks (control, service and strategy).
- The study supports the proposition that complementarities between the three learning processes do exist (Zahra & George, 2002; Lichtenthaler, 2009) with the result that the three learning processes together are a stronger mediator than the single processes.
- The study presents new knowledge about learning processes in Norwegian boards.

- The qualitative analysis shows that information flow has an impact on absorptive capacity to 1) renew and secure the presence of knowledge and skill and 2) to improve the exploratory learning in a board.
- The qualitative analysis further illustrates that the role and power of the CEO might have an impact on the board task performance and effort norms in boards.
- A comprehensive utilisation of consensus has an impact on transformative and exploitative learning.
- The results in the study have consequences for board practice, providing advice on learning processes in boards, board education and board elections.

1.3. Summary of the thesis contents

The thesis has six chapters. The content of the chapters is summarised below:

Chapter I: Introduction (this chapter)

In **chapter II** prior literature regarding research on corporate governance, dynamic capabilities and absorptive capacity is reviewed. Within corporate governance the main stream literature is accounted. Further, the dimensions of dynamic capabilities are described, and former research within absorptive capacity approach is reviewed. Based on the review, gaps in knowledge are identified. A conceptual model and hypotheses to examine the relationship between presence of knowledge and skills and board task performance, with absorptive capacity as a mediator, are derived.

In **chapter III** the methodology and the methods of the thesis are presented. A quantitative and a qualitative analysis are included in the study. The quantitative analyses are based on The Value Creating Board Survey (from Norway), while Healthy (a publically owned, but

privately run health company in Norway) is the subject of the case study. The chapter further describes quantitative and qualitative tools for the analyses. Measurements to validate the statistical analyses are derived.

In **chapter IV** I present the results and findings of the model and hypotheses testing between presence of knowledge and skills and board task performance, including the mediating effects of absorptive capacity. SEM analyses and regression analyses are employed to test the hypotheses derived in chapter II. Control variables are tested, and reliability analyses are conducted.

Further, results from the case study are reported and discussed. The constant, comparative method is used.

In **chapter V** the findings of the analyses in relation to existing literature, and contributions to knowledge are identified and discussed. Implications for board theory, practice and policy are described.

The conclusions and new contributions to knowledge are presented in **chapter VI**.

II. Theories, concepts and empirical research on corporate governance, boards and absorptive capacity: a review and synthesis

2.1 Introduction

I will in this chapter present the literature streams which are of importance to my research questions. Based on the literature, propositions and hypotheses for testing will be derived and discussed.

Research on corporate governance was mainly initiated in the nineteen seventies. Since then we have seen a growth in the number of studies as well the range of theoretical perspectives on, and methodological approaches to, corporate governance research. Jensen and Meckling (1976) proposed agency theory as an explanation of how the owners could safeguard their interest in the companies, given the assumption that managers are self-interested without bearing the full wealth effects of their decisions. About two hundred years earlier, Adam Smith predicted the same issues when he pronounced that a "joint stock company could never survive the rigors of a competitive economy, because waste and inefficiency would surely bring it down" (Daily & al, 2003, p.2; Smith, 1937).

The concept "corporate governance" comprises all parts of internal and external corporate structures, with the intention of monitoring and directing the actions of management and directors in a company. Boards' activities, corporate decision-making, board behaviour and value creation are thus just some of the topics related to corporate governance. Simultaneously; boards are playing a momentous role in the corporate management and will thus be an important contributor to corporate governance in companies (Donaldson, 1990; Fama, 1980; Jensen & Meckling, 1976; Pfeffer 1972; Zahra & Pearce, 1989). Several theories have been developed to describe the relationship between the owners and the managers of companies with varying emphasis on the boards' position in the corporate system. Among these, agency theory is the theory which has been most discussed, reviewed and analysed

(Daily et al, 2003; Dalton et al, 1998; Gabrielsson & Huse, 2004). Research and literature on boards will be reviewed in the following chapters, and the influence of the different governance theories on this research will be discussed.

Further, from an organisational behavioural perspective some attempts have been made to conceptualize boards as a special form of team and apply a processual analysis. However, very few approaches have looked into processes related to use of knowledge and skills in boards. The absorptive capacity approach may represent a tool for such an analysis. Absorptive capacity is one of several dynamic capabilities (Zahra & George, 2002). The dynamic capability approach has its intellectual origins in the resource-based view of the firm (Collis & Montgomery, 1995). Dynamic capabilities emphasise however, resource development and renewal (Teece et al, 1997) opposed to the resource based view where resource choice is focused (Wernerfelt, 1984).

The absorptive capacity concept was developed by researchers from the nineteen eighties and forward. Cohen and Levinthal (1989, 1990) leaned on learning theory when they introduced the absorptive capacity concept in a firm context. Several researchers have contributed by a further development of the concept (Lane et al, 2006; Tudorova & Durisin, 2007; Volberda et al, 2010; Zahra & George, 2002), with empirical, quantitative research (Boynton, Zmud & Jacoba, 1994; Cohen & Levinthal, 1990; Lichtenthaler, 2009; Szulanski, 1996) and with qualitative studies (Easterby Smith, Graça, Antonacopoulou & Ferdinand, 2008a; Kim, 1998). The literature associated with absorptive capacity will be reviewed in the second part of this chapter.

2.2 The traditional approach to corporate governance

2.2.1 Definitions

The book “The Modern Corporation and Private Property” written by Berle and Means (1932), serves as a foundational text in corporate governance. Berle and Means (1932) argued that the structure of corporate law in the United States in the 1930’s enforced the separation of ownership and control, since shareholders own shares in the corporate entity and elect corporate directors who control the company's activities (Berle & Means, 1932).

Corporate Governance may be defined in various ways. The Cadbury Report (1992) is one of the earliest documents which define Corporate Governance. It states: “Corporate governance is the system by which companies are directed and controlled. Boards of directors are responsible for the governance of their companies...”, (The Cadbury Report, 1992, p.14). Sir Adrian Cadbury was the father of the core of the UK Combined Code on corporate governance, which regulates corporate governance in UK companies. The full definition elaborates on corporate governance dimensions to include “boards’ strategic aims”, “responsibility of providing and supervising the management” and “reports to the shareholders” (Cadbury, 1992). This definition was later developed by the OECD, defining Corporate Governance as: “Procedures and processes according to which an organisation is directed and controlled. The corporate governance structure specifies the distribution of rights and responsibilities among the different participants in the organisation – such as the board, managers, shareholders and other stakeholders – and lays down the rules and procedures for decision-making”, (OECD, annual report, 2004). The OECD definition thus resembles and extends the definition of the Cadbury report.

The topic of corporate governance originated in finance, economics and law, but has over the years also attracted interest from a wide range of academic disciplines studying business enterprise (Zahra & Pearce, 1989; Collins, 2000). More recently; Huse (2007) has related

corporate governance directly to the value creation in firms with his definition: "Corporate governance is the interaction between various internal and external actors and board members in directing a firm for value creation" (Huse, 2007, p.15). This definition includes the full range of a company's activities in its aim for value creation and is thus a wide and comprehensive definition. Furthermore, it also emphasises the human side of corporate governance and dynamics inside and outside the boardroom.

2.2.2 Corporate governance - an overview

The development of corporate governance is closely related to the economic development of industrial capitalism. Different governance structures evolved with different corporate forms which were designed to address new economic problems (Clarke, 2007). Economic growth, technological innovation and increased per capita income made the processes of production and income distribution more complex. Existing market mechanisms were thus no longer sufficient to explain these flows effectively (Chandler, 1977). As a consequence, the management function shifted from entrepreneurial "capitalist" owners to managements, which implied a change in the position of shareholders (Berle, 1965).

Chandler's analysis of the managerial revolution examined how the "visible hand" of management (Chandler, 1977, p.1) replaced what Adam Smith termed the "invisible hand of market forces" (Clarke, 2007, p.3). While neoclassical economists developed a theory of allocation based on market exchange, neglecting the economic analyses of the "productive sphere" (Clarke, 2007, p.4) of the economy, other scholars attempted to explain economic governance based on a new understanding of economic activity and resource allocation (Berle, 1965; Chandler, 1977). Related to this development, the corporate governance system provides a framework. Over time several theoretical explanations have been developed related to this system (Clarke, 2007).

The dominant theoretical perspective applied in corporate governance studies is agency theory (Clarke, 2007; Dalton, Daily, Ellstrand, & Johnson, 1998). Gabrielsson and Huse (2004) reported that agency theory was employed as the main theoretical perspective in 54% of the corporate governance studies, and Daily et al (2003) stated that “the overwhelming emphasis in governance research has been on the efficacy of the various mechanism available to protect shareholders from the self-interested whims of the executives” (Daily et al, 2003, p.371). Because of its dominance in the field of corporate governance, agency theory will be reviewed and discussed in more details than some of the other theoretical approaches. However, the analyses in this thesis are not based on one single theory, and the results will therefore be discussed in relationship to several theories.

Jensen and Meckling (1976) proposed agency theory as an explanation of how the public corporation could exist, given the assumption that managers are self-interested, simultaneously as those managers do not bear the full wealth effects of their decisions.

While Jensen & Meckling (1976) explored the ownership structure of the firm, Fama (1980) discussed the role of efficient capital and labour market for the control of the top management. In a later paper Fama and Jensen (1983) further analysed how the control of the agency problems are solved by separation of decision and risk bearing functions in the companies. In particular, the contract structures of all these organisations separate the ratification and monitoring of decisions from the initiation and implementation of the decisions (Fama & Jensen, 1983).

Even if agency theory has been employed as the main theoretical perspective for the majority of studies (Gabrielsson & Huse. 2004), other theoretical approaches have influenced the research, prior to and after the introduction of agency theory. Property rights theory is an example thereof. Commonly, dissatisfaction with neoclassical economics’ treatment of firm behaviour is present in these theories. However, the ‘classical’ form of property rights theory

provided greater attention to the historical and institutional context that shapes and changes property rights and therefore led to 'getting the incentives right' (Coase, 1960; Alchian & Demsetz, 1972). The 'modern' version of property rights theory, attempts stylised modelling of ownership and incentive structures (Barzel, 1997). In this approach managers and owners/financiers sign a form which specifies what the manager does with the funds provided by the financiers. The issue is the development of an optimal incentive scheme to align the behaviour of the managers/agents with the interest of owners/principals as described in agency theory (Jensen & Meckling, 1976; Eisenhardt, 1989a).

Furthermore, other theoretical approaches followed in the wake of agency theory. Freeman (1984) brought the stakeholder theory into corporate governance literature. He characterised stakeholders as individuals "who can affect and are affected by the achievement of an organisation's purpose" (Freeman, 1984, p.54). Stakeholder theory proposes that by including the stakeholders' interests, acting morally and serving social purposes, the companies will be more successful (Jones & Wicks, 1999).

In contrast to the other corporate governance theories, class hegemony theory has its origin in Marxist sociology (Mills, 1956; Ratcliff, 1980). In this theory the board members are proposed to exercise the power of the ruling capitalist elite over social and economic institutions. Researchers suggested that only the most influential directors are invited to participate in the boards and by this selection of directors, the capitalists' interests are safeguarded (Pettigrew, 1992; Zahra & Pearce, 1989).

While agency theory is based on the need to control the management, the stewardship theory is based on confidence in the management and their loyalty. Stewardship theory considers managers as stewards whose motives are aligned with the objectives of shareholders (Davis et al, 1997). The core idea is that managers are trusted to act in the best interests of shareholders (Huse, 2007; Muth & Donaldson, 1998). Furthermore, this theory focuses on the way the

group of managers are motivated, instructed and evaluated, and how the organisation endeavours to facilitate structures to allow executives to achieve high corporate performance (Donaldson, 1985).

Resource dependence theory theoretically underpins the importance of external resources for the firms, since costs might be greatly reduced by reduced uncertainty and improved search (Pfeffer, 1972). Outside directors in boards further provide access to resources needed by the firm (Pfeffer, 1972; Pfeffer & Salancik, 1978). The provision of these resources enhances firm performance and survival. The four primary resources related to this theory are counsel, communication channels to external firms, assistance in obtaining the resources themselves, and legitimacy (Hillman, Keim & Luce, 2001). Boards contribute to financial performance by including directors who have direct or indirect access to, control of or knowledge of important external resources or influential groups (Huse, 2007).

While the advocates of the resource dependence theory argue that external board members will contribute with safety, legitimacy and network, the resource based theory underlines the board as an internal resource of competitive advantage (Huse, 2007). A resource-based view of the firm will thus denote the board as a firm-internal resource of competitive advantage (Barney, 1991; Penrose 1959; Wernerfelt 1984). According to Barney (1991), firm resources are the assets, the capabilities, the organisational processes, the firm attributes, the information and the knowledge.

There are two basic assumptions in resource-based view of the firm:

- Resources are distributed heterogeneously across firms
 - These productive resources cannot be transferred from firm to firm without cost
- (Barney, 1991)

Given these assumptions, it is argued that resources are both rare and valuable. Resources which are simultaneously rare, valuable, inimitable, non-substitutable and non-transferable

are the ones that will create lasting competitive advantage. From a resource-based perspective, governance choice may affect the creation of economic rents (Wernerfelt, 1984). A capability is a core concept in resource-based view of the firm. A capability can be considered as the coordinated use of resources in order to respond and act competently when the firm is facing problems and challenges. Capabilities may allow the firm to address and solve a particular issue or problem better than the competitors of the firm (Amit & Schoemaker, 1993; Barney, 1991).

As reviewed above, the focus in corporate governance has been centred to the relationship between shareholders and managers, the role of stakeholders, the role of different elites, and the importance and the safeguarding of resources inside and outside the firm (Barney, 1991; Fama & Jensen, 1983; Friedman, 1984; Jensen & Meckling, 1976; Pfeffer, 1972; Wernerfelt, 1984; Zahra & Pearce, 1989). In these theories the boards represent a connecting link between the shareholders and the managers. The expectations of what board directors should do varied depending on the theoretical perspective. Board monitoring has been described as important (Johnson, Daily & Ellstrand, 1996), with boards of directors described as "the apex of the internal control system" (Jensen, 1993, p.862). As a demonstration, directors were expected to be responsible for key oversight functions that include hiring, firing, and compensating CEOs. Directors are also ultimately responsible for effective organisational functioning (Blair & Stout, 1999; Dalton et al, 1998; Jensen, 1993; Johnson et al., 1996). The more detailed review of boards' position in the different research streams follows in the next chapter.

2.2.3 Boards in corporate governance

Boards represent an important strand in corporate governance research, not at least because of the pivotal role of boards in directing and controlling organisations (Cadbury, 1992; Daily et al, 2003).

Agency theory was for a long time among the most recognised strand in research on the contribution of boards (Zahra & Pearce, 1989). According to this theory, board members' contribution to organisational performance occurs by reducing agency cost, selecting and rewarding the CEO, evaluation and strategic decision-making and control (Jensen & Meckling, 1976). Agency cost occurs when the management is controlled and monitored to ensure that the interests of shareholders are maximized (Jensen & Meckling, 1976).

The board of directors is thus made responsible as supervisors of the agents (managers), to secure the investments of the shareholders. The critical function of controlling and monitoring the managers is thus a core responsibility of boards (Fama & Jensen, 1983; Jensen & Meckling, 1976). When stakeholder theory is related to agency theory the board may further have a task to "explore, explicate, review, discuss and compare stakeholder expectations of board roles" (Huse & Rindova, 2001, p.154). As a result, the board will partly adopt a political role in negotiating and resolving conflicts and advocating for stakeholders (Huse, 2007).

Whereas agency theorists view executives and directors as self-serving and opportunistic, stewardship theorists describe them as frequently having coincident interests with those of shareholders (Davis et al.1997; Donaldson & Davies, 1991). Regarding stewardship theory boards' control function is therefore limited (Muth & Donaldson, 1998). Further, the theory focuses on the strategic and service tasks of boards rather than the control task (Davis et al, 1997). The communication between the board and the management is characterised by trust, cohesiveness, partnership and mentorship (Huse, 2007). In some stewardship research it is stated that CEO duality "empowers the CEO and stimulates the motivation to achieve" (Muth & Donaldson, 1998, p.9), giving a clear decision-making authority (Stiles & Taylor, 2002). Specifically, structures will assist them in attaining superior performance by their companies to the extent that the CEO exercises complete authority over the company in an unambiguous

and unchallenged role. How and to which degree the organisation structure helps the executives to formulate and implement plans for high corporate performance might represent an issue (Donaldson 1985).

Resource dependence theory advocates the directors' resource role (Dalton et al, 1998; Hillman et al, 2001; Johnson et al., 1996; Pfeffer, 1972). Outsider directors provide access to resources needed by the firm. They may, inside or outside board meetings or in private communication, ensure environmental services that may otherwise be more costly for the firm. The provision of these resources enhances organisational functioning, firm performance, and survival (Hilman & Dalziel, 2003; Pfeffer, 1973; Zahra & Pearce, 1989).

In class hegemony theory boards are a mechanism for the power and control of the ruling capitalist elite over social and economic institutions (Domhoff, 2010). The boards are responsible of the recruitment of directors. The board members further contribute by reducing transaction cost for member firms (Pettigrew, 1992; Zahra & Pearce, 1989).

A resource-based view of the firm will denote the board as a firm-internal resource of competitive advantage (Barney, 1991, Hillman et al, 2001; Penrose 1959; Wernerfelt 1984). In the same way as resource dependence theory, this theory describes the board as a provider of access to resources needed by the firm (Pfeffer, 1972; Wernerfelt, 1984). The difference between the two relates to the external focus of resource dependence theory in contrast to the internal focus of the resource based view (Huse, 2007). A resource-based view of the firm has further been suggested as a realistic approach for understanding boards of directors (Barney, 1991). The board members will provide valuable advice and counselling to corporate decision-making processes (Stiles & Taylor, 2002). The board is considered to be a resource for the company and its management, and the board has been considered as a strategic resource impacting company performance (Barney, 1991).

From a resource-based perspective (Macus, 2002) boards can be characterised by:

- Boards are valuable for the whole firm and not only for external actors
- Good board members who have both knowledge and motivation are scarce
- The culture and processes within the boardroom are inimitable.

Even if the relationship between owners, managers, environmental stakeholders and boards is positioned on various assumptions in the theories of corporate governance, the theories have also several characteristics in common. First, the traditional view in the theories was that boards could be described by elementary input-output models on board composition and firm performance. Boards' structure and composition were thus expected to directly affect firm performance (Donaldson & Davies, 1991; Fama & Jensen, 1983; Jensen & Meckling, 1976; Pfeffer, 1972; Wernerfelt, 1984). During the last thirty years research on boards has developed. Initially, the relationship between boards' attributes and firm performance was investigated, but with inconclusive results (Dalton et al, 1998). Therefore, more recent attention has been drawn to board behaviour, board processes and boards as a team, analysing the effect on board task performance (Huse, 2009). Board research is further reviewed in the next section.

2.3 Board attributes and firm performance

2.3.1 Research on board composition, characteristics and structure

Most prior research on boards is focused on the relationship between board attributes and board performance. Zahra and Pearce (1989) denoted "board attributes" as composition, characteristics, structure and processes (Zahra & Pearce, 1989, p.291). Generally, board composition is a "surrogate for board independence" (Dalton, Daily, Johnson & Ellstrand, 1999). This section reviews the classic board attributes where processes are not involved. Board processes will be reviewed in section 2.5.

Board composition denotes the size of the board and the mix of director types. While size refers to the number of directors of the board, type refers to the dichotomy between inside and outside directors. Outsiders are not members of the top management team, their associates, or families, are not employees of the firm or its subsidiaries, and are not members of the immediate past top management group (Jones & Goldberg, 1982; Zahra & Pearce, 1989). Board structure is related to board organisation as committees and leadership (CEO duality and compensation). The concept further refers to the dimensions of the board's organisation as it covers the number and types of committees, committee memberships, the flow of information among these committees and between the management and the board, board leadership, and patterns of committee membership. Characteristics refer to the directors' experience, education, practice, gender and age and other personal properties that influence directors' interest in and performance of their tasks (Zahra & Pearce, 1989).

An evolving research stream suggested that the internal structure of the board is a major determinant of financial performance (Fama & Jensen, 1983; Jensen, 1993). Efficient board structure and composition were thought to facilitate directors' involvement in shaping the mission and strategies followed by the firm, and in strengthening the position of directors relative to that of the CEO (Zahra & Pearce, 1989). Board characteristics were further proposed to explain board task performance as “usual suspects” (Finkelstein & Mooney, 2003). In general, these non-process factors were thus supposed to influence the decision-making as well as the speed and quality of directors' decisions (Zahra & Pearce, 1989).

The next sections will review research on board composition, structure and characteristics.

2.3.2 Outsider or insider directors

With respect to board composition, agency theory suggested that a higher proportion of outside directors could lead to better monitoring of self-interested managers, since outside

directors can monitor the management as “decision control experts” (Fama & Jensen, 1983, p.315). In agency theory control is the primary concern, and separation of ownership and control leads to self-interest actions by managers (Dalton et al, 1998). Board composition should thus provide a sufficient independence of board directors from management to protect the interests of shareholders (Johnson et al, 1996). As a result, effective boards should be comprised of outside directors (Dalton et al, 1998).

Stewardship theory argues however, that inside directors are associated with higher firm performance (Dalton et al, 1998; Davies et al, 1997; Kesner, 1987). Since the primary concern of this perspective is the board’s effective performance of its “strategic role”, boards with a higher proportion of executives will according to stewardship theory perform better (Sundaramurthy & Lewis, 2003). Finally, in resource dependence theory outside directors are characterised as a resource of knowledge and networks for the firm (Dalton et al, 1998; Johnson et al, 1996; Pfeffer, 1972).

The first issue will actually be the definition of inside and outside directors. Most of the empirical research has attempted to capture the independence of outside directors, but there have been various definitions of what constitutes an outside director, and different terminology has been used. One way of measuring has been the proportion of inside directors to total directors (Westphal & Zajac, 1995), while a second approach has been the ratio of outside directors to total (Dalton & Kesner, 1987). Johnson et al (1996) defined affiliated board members as directors who have business dealings with the firm, or have relatives of current or former executives or employees. Affiliated directors are not independent, but from a resource dependence perspective their counselling/expertise function might be highly effective (Dalton et al, 1998). Further, the difference between an inside and an outside director has been defined as “grey”. Weisbach (1988) thus classified directors as inside, outside or grey, with grey directors being those directors who are not employees or managers,

but who may not be independent of current management. Finally, Daily and Dalton (1994) suggested another approach to the outsider classification, when defining an outside director as one who was appointed to the board prior to the CEO, while other researchers have focused on the NEDs (nonexecutive directors) (Stiles, 2001). However, it seems to be a paradox that the directors need to be closely attached to the company in order to provide suitable advices to the management, and simultaneously, they should keep distance to safeguard the control (Stiles & Taylor, 2003). Some later researchers have thus suggested that 'independence of mind' is the key attribute (Roberts et al, 2005; Zattoni & Cuomo, 2010).

In empirical studies the findings of the effects on firm performance have been mixed. A long stream of research from the middle of the eighties to the middle of the nineties found no relationship between board composition and firm performance (Daily & Dalton, 1994; Dalton et al, 1998). Further, in a review of the literature on boards of directors, Hermalin and Weisbach (2003) concluded that board composition was not related to corporate performance, and further, that board composition was related to the quality of the board's decisions on CEO replacement, acquisitions, poison pills, and executive compensation. These findings imply that firms with higher proportions of outside directors make different decisions even if they not necessarily make better decisions. Furthermore, in a study from 2004 Ryan and Wiggins examined the relationship between director compensation and the proportion of outside (independent) directors and found that shareholders' economic interests are best served when the board remains independent. Dahya and McConnell (2005) found a significant positive correlation between the likelihood of an outside CEO appointment and the fraction of outside directors in a study of more than 500 CEO appointments in UK firms over the period 1989-1999. This research indicated that increasing the representation of outside directors on the board will have an impact when board members decide whether the firm hires an inside or an outside CEO.

However, in most of the research it was proposed that the composition of the board was affected by the organisation's need to deal differentially with various important sectors or organisations in the environment. The effect of the board composition on company success will then, depend on how well the board meets environmental requirements, or there will be a contingency model of board size and composition. However, Hermalin and Weisbach (1998) challenged this endogeneity of board composition stating that firms which perform poorly are more likely to look outside for board directors. In a cross-sectional study, this effect is likely to make firms with more outside directors look worse because this effect leads to more outside directors on firms which historically performed poorly. Similarly, when analysing data from almost a thousand of the largest US firms, Bhagat and Black (2001) found that even if low-profitability firms respond to their business troubles by increasing the proportion of independent directors on their boards, there is no evidence that this strategy works.

Finally, the link between firm performance and board composition has been described in various manners by the researchers. Accounting performance, sales growth Tobin Q (the ratio between the market value and replacement value of the same physical asset) and the development in the long term stock market were introduced, but a significant support of a relationship between board composition and these measures of firm performance have been rare. First, a number of studies used return on capital employed compared with the number of outside directors of the board. No significant relationship was found (Bhagat & Black, 2001; Dalton et al, 1998). In 2004 a study was conducted in China by Peng, and he found some support that outside directors have a positive effect on sales growth, but not on financial performance when using accounting measures, and Baysinger, Kosnik, and Turk (1991) reported a positive correlation between percentages of inside directors and research and development (R&D) spending per employee (Baysinger et al, 1991).

Bhagat & Black (2001) further examined the effect of board composition on long-term stock market and accounting performance without detecting that firm performance was related to the proportion of outside directors on the board. Lately, Coles, Naveen and Naveen (2008) concluded that Tobin Q increases with the proportion of inside directors in R&D (research and development) intensive firms. Their conclusion suggested that firms with more insiders do not perform worse than those with more outsiders.

In a meta-analysis Dalton et al (1998) conducted a review of 54 empirical studies from main journals of multiple organisation of board composition to firm performance. A moderator analysis proposed limited support of a systematic relationship although some correlations were found (Dalton et al, 1998). The evidence suggested that board composition had no effects on firm performance. Further, no significant moderation was found by size of the firms or type of performance (Dalton et al, 1998).

As a conclusion, questions related to board structure and compositions have received focus from several researchers during a long period of time, but the findings are mixed, and “literature shows little consensus as to the specific configuration of an effective corporate board” (Johnson et al, 1996).

2.3.3 Board size

According to agency theory, large companies require a greater number of directors to monitor and control a firm’s activities compared with a smaller one (Jensen & Meckling, 1976). A larger board will because of a greater number of members be better in reviewing management’s actions. However, the theorists suggested an upper limit of board members. Jensen (1993) implied this limit to be about eight directors, since a greater number would interfere with group dynamics. Resource dependence theory has further been a primary foundation for the perspective that larger boards will imply higher firm performance (Dalton

et al, 1999; Pettigrew, 1972). Board size may, according to this theory, be a measure of an organisation's ability to form environmental links (Dalton et al, 1999; Goodstein et al, 1994). Directors of boards may further account for board service providing the CEO with advices which is elsewhere unobtainable (Zahra & Pearce, 1989). A larger board will thus represent a larger level of high-quality advice (Dalton et al, 1999). However, largeness can inhibit board ability to initiate strategic activities (Goodstein et al, 1994). Finally, large boards might develop fractions and coalitions which might imply group conflicts, hindering consensus (Goodstein et al, 1994).

There are a limited number of studies directly related to the number of board directors. Generally, no consistent findings have been obtained (Daily et al, 2003; Hermalin & Weisbach, 2003). However, an American study of more than 200 medium sized companies reported an inverted u-shaped relationship between board size and corporate entrepreneurship, where corporate entrepreneurship was further related to product and process innovation, organisational motivation and venturing (Zahra et al, 2000).

Further, a meta-analysis by Dalton et al (1999) was based on 37 studies with more than 130 samples. A significant correlation between board size and firm performance of 0.16 for all firms was found. Further, board composition did not moderate these results. The correlation was stronger for smaller compared with larger firms (Dalton et al, 1999). This result does not fit in with the arguments from Jensen and Meckling (1976), who proposed that a higher number of directors are required in larger companies.

2.3.4 CEO duality

CEO duality or unitary leadership exists when the CEO serves also as the board chair. Separated leadership is grounded in agency theory, regarding the potential of management domination of the board (Dalton et al, 1998; Finkelstein & D'Aveni, 1994). Fama & Jensen

(1983) argued that concentration of decision management and decision control in one person gives this person too much power and consequently lowers the effectiveness of board monitoring. It has been argued that CEO duality “promotes CEO entrenchment by reducing board monitoring effectiveness” (Finkelstein & D’Aveni, 1994, p.1079). On the other hand, stewardship theory claims that CEO duality by the joint structure may facilitate superior firm performance, (Dalton et al, 1998; Donaldson & Davies, 1991). This is because CEO duality provides unified firm leadership, avoiding ambiguities regarding who is responsible for firm processes and outcomes (Donaldson, 1990). Other streams of research have noted no relationship between CEO duality and firm performance (Daily & Dalton, 1992; Rechner & Dalton, 1989).

Empirical research has been conducted over a long period of time with various findings regarding CEO duality. In an empirical research in 1987 separation of the roles was predicted to have a more positive effect on performance because effective checks and balances were executed as stated in agency theory. Consequently, the dominance by the CEO of board activities would be minimised (Dalton & Kesner, 1987). The studies were, however, just suggestive in their documentation of the implications of board structure for board task performance (Zahra & Pearce, 1989). Rechner and Dalton (1991) found that separated leadership was associated with other measures of financial performance.

In the on-going research during the nineties Jensen (1993) further argued that the same person should not hold the CEO and chairman role simultaneously, as the board members cannot safeguard the full control responsibility. Next, principal functions as evaluating and hiring CEO’s will be undermined. Brickley et al (1997) conducted a survey of more than 700 firms in 1988 where unitary leadership was supported. They identified four reasons. First, there are additional costs of separating the CEO and the chair as agency costs of controlling the behaviour, and costs of having firms changed related to inconsistent decision-making.

Second, they concluded that chairs are often former CEO's within the company and thus have detailed and valuable knowledge of the company. Third, they found evidence proving that firms employed the title of chairman as a reward for CEO's who performed well. Fourth, they found evidence that unitary leadership structure is associated with excellent accounting and market returns (Brickley et al, 1997).

In another study Goyal & Park (2002), however, concluded that the roles should be separated. Their study of CEO duality revealed that the sensitivity of CEO turnover to firm performance is significantly lower when the CEO and chair is the same person. In conclusion, the research is not clear if a separation of the CEO and the chair is preferable.

In a meta-analysis based on 69 samples Dalton et al (1998) found no systematic relationship between leadership structure and financial performance. Further, firm size was tested as a possible moderator to this relationship, but no significant results were reported (Dalton et al, 1998).

Conclusively, there are different theoretical positions, but no strong empirical support for either.

2.3.5 Board diversity

There is some research on board diversity (Milliken & Martins, 1996; Minichilli et al, 2009; (Simons, Pelled & Smith, 1999). Most of the diversity literature has its focus on demographic diversity (Erhardt et al, 2003), but board members' values, knowledge and functions are examples of other categories which have been objects of research (Simon et al, 1999; Minichilli et al, 2009). However, the research on diversity in boards is limited. The concept of diversity has, however, its roots in the organisational field, and has been widely investigated as a potential predictor of team performance (Minichilli et al, 2009). Regarding organisational theory diversity is a unit-level, compositional construct, which is also attribute specific

(Harrison & Klein, 2007a). Groups, who are rich in diversity of knowledge and perspectives, have more tools and more insight to handle problems than other groups who lack such diversity (Carpenter, 2002; Harrison & Klein, 2007b). However, a diversified group may involve individuals who vary in their knowledge, power and attributes. When diversity types vary in these ways, the predicted benefits of variety may not materialise (Harrison & Klein, 2007b).

Further, Forbes and Milliken (1999, p.491) defined boards as “workgroups in organizations with intact social systems that perform one or more tasks within an organizational context”, believing that all boards qualify as groups in this respect. Research on diversity in organisational theory might thus be employed in a board context.

In organisational theory and small team research a number of empirical studies on teams have been conducted. Within demographic diversity, several categories have been studied including gender (O'Reilly, Williams & Barsade, 1997), race and ethnicity (Riordan & Shore, 1997), age (Pelled, 1996), tenure (Hambrick, Cho & Chen, 1996), education (Jackson, Brett, Sessa, Cooper, Jelin, & Peyronnin, 1991) and functional background (Jehn, Northcraft & Neale, 1999). Further, researchers have investigated differences in many non-demographic variables, including values (Jehn et al., 1999), attitudes (Harrison, Price & Bell, 1998), affect (Barsade, Ward, Turner & Sonnenfeld, 2000) and network ties (Beckman & Haunschild, 2002). Guided by these theories, research has increased considerably in this field (Harrison & Klein, 2007a). Yet, as noted by many authors, the results have been disappointing (Harrison et al, 1998; Pitcher & Smith, 2001). Cumulative findings about the consequences of within-unit differences have been weak, inconsistent, or both (Harrison & Klein, 2007a).

Since boards are an organisational group with similar tasks and issues as other teams or groups in an organisation, diversity might affect the outcomes from board of directors in a similar way as described for teams in organisational theory. Traditionally, in board contexts

the relationship between board diversity and firm financial performance has been analysed. A common distinction in the managerial literature is between diversity on observable attributes (such as race, age and gender) and diversity on underlying attributes (such as education, technical abilities, functional background and personality characteristics) (Milliken & Martins, 1996). For example, diversity in functional background is typically job related since it captures “experience, information, and perspectives relevant to cognitive tasks” (Simons et al, 1999, p. 663). Skill- or knowledge-based diversity may produce positive cognitive outputs, because it increases the likelihood of creative and innovative solutions to problems. However, negative consequences as integration problems among group members might appear as described by Harrison and Klein (Harrison & Klein, 2007a; Minichilli et al, 2009).

More recently, a substantial part of the diversity studies on boards focuses on women (Erhardt, Werber & Shader, 2003; Huse, Nielsen & Hagen, 2009), but diversity in general might have an influence on board activities and some empirical studies have been reported (Erhardt et al, 2003; Minichilli et al, 2009).

The main diversity argument for women on boards is that they exert a positive impact on tasks of qualitative nature, such as strategic and CSR controls (Bilimoria, 2000; Rosener, 1990, 1995; Selby, 2000). One criticism of men is that they focus on financial and quantifiable issues and less on the human and social aspects of business (Huse & Solberg, 2006).

Based on the Norwegian survey, no support was confirmed regarding the relationship between board control and women on board (Huse et al, 2009). Further, the test of an impact of women on boards with regard to creative discussions in the board room was not significant. The esteem of women was, however, supported in relation to budget control tasks (Huse et al, 2009).

Effects of minorities (African, Hispanic, Asian and Native Americans) in boards have also been tested. The results of this study supported the original hypothesis stating that relatively higher levels of board diversity would lead to higher organisational performance. (Erhardt et al, 2003). Further, a study of 127 large US companies reported that executive board of director diversity was positively associated with both return on investment and return on assets. (Erhardt et al, 2003). However, Minichilli et al (2009) found a significant and negative relationship between background diversity and board advice performance, board behavioural control and board outcome control. No significant relationship was found between background diversity and board strategic participation or networking (Minichilli et al, 2009).

These results emphasise the messages by Milliken and Martin (1996) and Rindova (1999), who stated that backgrounds and experiences go beyond gender and external demographics and that the personalities of the individual board members should be considered when researching the implications of diversity (Huse et al, 2009).

Finally, in a meta-analysis of the effects of task-related (tenure) and non-task-related (ethnic and gender) diversity in an organisational context, no dependable effects on performance or cohesiveness were revealed (Webber & Donahue, 2001).

One special sort of diversity is the distinction between ordinary board members and board members elected by and among the employees. The impact of employee elected board members will be reviewed in the next section.

2.3.6 Employee elected board members

Employee elected board members are a part of the analysis in both the quantitative and the qualitative analysis in this thesis. Employees' participation in boards in Norway and UK will therefore be briefly reviewed together with existing research in this field. However, this is a field which has not been extensively studied in existing research.

Employee-elected members in boards have recently been seen as an important feature of a European model of corporate governance (Gordon & Roe, 2004; Huse et al, 2009; Rasmussen & Huse, 2010). The level of attention to employee elected board members has further increased among both national and European level trade unions (Carly, 2005; Taylor, 2005).

After the Second World War the public debate over employee representation on company boards was characterised by “indifference, neglect and confusion” (Kluge & Stollt, 2005, p.53). Except Germany (where a two-tier board system is practised) and eventually Austria, for several years it was rarely debated as an urgent issue in the current E.U. countries.

Based on political events in the late sixties, the discussion of workers general role and participation in companies was resumed, which resulted in a proposal by the European Commission to provide the opportunity for employee representation in boards of private companies. In 1972 the the European Economic Community thus drew up draft legislation, claiming that all companies with more than 500 employees should establish a two-tier board structure similar to the German system (Kluge & Stollt, 2005; Taylor, 2005). Despite opposition from several companies, the European Economic Community emphasised strongly the importance of participation by the employees at board level. The UK Prime Minister Margaret Thatcher (after 1979) was strongly opposed to an extension of trade union power in companies, in general and in boards. This was privately agreed upon by several other members of the governments (Kluge & Stollt, 2005). After some years of negotiation, this attempt failed due to resistance from private companies and disagreements among the member countries. In 1983 the legislation was temporarily closed down.

However, some of the basic arguments for employees’ representation in boards remained highly relevant, even if differences between the member countries are still present. As a result, new E.U. legislation in the form of a directive that deals with board-level representation of employees came into effect in 2004 (Kluge & Stollt, 2005). The directive

states that the employees are supposed to be informed and consulted and in some cases participate in boards, but “member states shall determine the method to be used for the election or appointment of the special negotiating body that are to be elected or appointed for their territories” (Council Directive 2001/86/EC; Kluge & Stollt, 2005, p.36). The referrals to national laws in the E.U. directive mean that the representation will only be mandatory “where such participation is a substantial feature of the national laws” (Kluge & Stollt, p.55). The idea is thus not to replace existing systems of employee participation, but to encourage flexibility and experimentation in the countries, accepting diversity of the systems. The UK is one of the few E.U. countries which still lack any laws that provide for a legal minimum in the development of employee representation in boards. The existence of employee representation at board level and even in information and consultation systems outside the board thus remains limited (Kluge & Stollt, 2005; Taylor, 2005).

In Norwegian boards employee elected members are by law to be elected in accordance with more detailed rules (reported in chapter III). This statutory provision was settled in 1972 after years of preparations, and the participation by employee representatives was implemented in Norwegian boards during the following two-three years. Since then the principle has become a part of Norwegian culture, and employees’ participation rights were written in the Norwegian Constitution in 1980 (The Norwegian Labour Department, 2010).

Based on a review of articles, research has focused on various outcomes, as job productivity and satisfaction as well as organisational productivity. In the review four studies of employee elected board members were included. The findings were not clear, showing various effects. When effects were analysed some years later, it was however, found that participating had a negligible effect on productivity and a mixed effect on job satisfaction (Cotton, Vollrath, Froggatt, Legnick-Hall & Jennings, 1988; Locke & Schweiger, 1979).

Further, the duration of the participating activities has turned out to have an effect on the results. Short term arrangements showed less commitment from the employees compared with activities which lasted over weeks or months (Cotton et al, 1988).

More recently, Huse et al (2009) tested the effect of employee elected board members based on a Norwegian survey with 384 respondents, where 57% were shareholder elected board members and 43% were elected by employees. In this study employee elected board members were found to have a positive impact on CSR control and strategic control, but negative for behaviour control. Furthermore, a positive relationship between employee elected board members and creative discussions in the board room was significantly supported (Huse et al, 2009). Effects of employee elected board members will be further tested in both the quantitative and qualitative part of this thesis.

2.3.7 Conclusions and gaps.

As discussed in the previous sections, traditional approaches to corporate governance concentrated on examining the relationship between board attributes and firm performance. In a review of the research in the period from 1989 to 2002, Gabrielsson and Huse (2004) found that agency theory was employed as the main theoretical perspective for about 54% of the studies. Dominated by agency theory and using archival data and quantitative methods, this research generated “best practice” prescriptions on structure and composition of boards (Zattoni & Cuomo, 2010). Other theories shared the rest of the attention from researchers, with resource dependence theory counting for about 18 % of the studies (Gabrielsson & Huse, 2004).

Finally, the mainstream theories within corporate governance have a number of important similarities as well as some differences. In particular, all the theories primarily focus on how board structure and composition impact on firm performance, but the findings are

inconclusive (Dalton et al, 1998; Dalton & al, 1999). The researchers have been criticised for ignoring 1) the processes impacting the relationships between structure and firm performance (Pettigrew, 1992) and 2) the behavioural aspects of (Huse, 2005). Furthermore, this concentration on board attributes has been criticised given the limited empirical support for the impact of board structure and composition on firm performance (Daily et al, 2003; Finkelstein & Mooney, 2003; Forbes & Milliken, 1999; Hermalin & Weisbach, 2003; Huse, 2005, 2007; Johnson et al, 1996; Pye & Pettigrew, 2005; Roberts et al, 2005). The traditional input-output approach has not sufficiently opened up the ‘black box’ to examine what actually takes place in boards (Pettigrew, 1992). This part of the corporate governance research has thus been regarded as providing a limited understanding of boards (Forbes & Milliken, 1999; Huse, 2005, 2007).

Because of the deficiencies, recent research has seen a change in emphasis. There has been a conceptual shift towards studying the processes that link board inputs to board outputs. Further, there has been a move towards the use of multi-theoretic perspectives, and there has been a methodological development away from the use of archival studies to survey based studies and a variety of qualitative type studies. Last, but not least, there has been an upcoming research stream on how board processes affect board outcomes. This stream has detected that board processes have stronger explanatory power of board task performance than board structures (Minichilli et al, 2009; 2012; Van Ees et al, 2009; Zona & Zattoni, 2007).

Board processes will be reviewed later in this chapter. In the next section board tasks will be further reviewed.

2.4 Board task performance

Forbes & Milliken defined board task performance as, “the board’s ability to perform its control and service tasks effectively” (Forbes & Milliken, 1999, p.492). Board activities and

board performance have, however, been defined and analysed by many researchers before and after Forbes and Milliken's (1999) article, and this performance is denoted by various expressions – as roles (Daily et al, 2003; Fama & Jensen, 1983; Hillman & Dalziel, 2003; Johnson et al, 1996; Pfeffer, 1972; Stiles and Taylor, 2002; Zahra & Pearce, 1989), tasks (Forbes & Milliken, 1999; Huse, 2005; 2007; Zona & Zattoni, 2007) and functions (Hillman & Dalziel, 2003). I will denote the board's activities as tasks in this thesis unless I refer to a specific study with another definition. Generally, in research on board task performance the focus is directed on what board members do and what affects board performance.

Zahra & Pearce (1989) suggested that boards have three primary roles: control, strategy and service. Furthermore, a wide variety of tasks have been conceptualised in the research, including control, service, strategy, advice, and networking (Forbes & Milliken, 1999; Huse, 2005, 2007; Minichilli, et al, 2009, 2012; Van den Heuvel, van Gils & Voordeckers, 2006; Van Ees et al, 2008; Zahra & Pearce, 1989; Zona & Zattoni, 2007).

Agency theory is appropriate for conceptualising the control task of directors, and the definitions of control and monitoring are mainly consistent in the literature. However, the agency theoretic approach places heavy emphasis on the board control (and monitoring) task as more beneficial than other board tasks such as service or strategy (Daily et al, 2003; Huse, 2005; McNulty & Pettigrew, 1999; Pye & Pettigrew, 2005). Additional theoretical perspectives are needed to explain directors' resource, service, and strategy roles, which are in nature multi-theoretical (Van den Heuvel et al, 2006). Stewardship theory (Donaldson, 1990) stressed the boards' strategic and service tasks - the board members' potential to provide advice to the executives and to participate actively in the formulation of strategy (Sundaramurthy & Lewis, 2003). Strategy has since Fama and Jensen's contribution (1983) in some research streams been split in decision management and decision control. While the decision management is ascribed to the top management team, the board is expected to be

responsible of the decision control (Fama & Jensen, 1983; Pugliese, Bezemer, Zattoni, Huse, Van den Bosch & Volberda, 2009). The resource dependence perspective suggested that directors may be actively involved in the strategic tasks through counsel and advice to the CEO, by initiating their own analyses, or by suggesting alternatives (Zahra & Pearce, 1989). As stated by Van den Heuvel et al, (2006) service tasks are sometimes located in the literature within strategy (Hillman et al, 2001; Hillman & Dalziel, 2003; Johnson et al, 1996; Zona & Zattoni, 2007), and strategy is partly included in the service task (Forbes & Milliken, 1999). Furthermore, one stream of the literature considered board tasks as created by individual board directors (Huse, 2005; Petrovic, 2008; Roberts et al, 2005). This means, within this literature, individual board director contribution is essentially about creating the tasks that a board needs to perform. Huse (2005, p.72) referred to director contribution as to “creating board role expectations” (“board accountability”), as “involvement of individual board members”. On the other hand, based on the argument that boards are small groups, acting in the same way as small groups generally, another stream of literature drew on the literature on small groups (Cascio, 2004; Forbes & Milliken, 1999; Petrovic, 2008). This will be further described below.

2.5 Board processes and board behaviour

2.5.1 Board processes

Forbes & Milliken’s (1999) article in which the board of directors was defined as a small cognitive decision-making team (Huse, 2005; Minichilli et al., 2009; Van den Heuvel et al, 2006; Van Ees et al, 2009; Zona & Zattoni, 2007) presented a seminal contribution to the conceptual work on board processes. Applying theories from group and cognitive psychology to understand board decision-making culture, they provided an important theoretical breakthrough in the understanding of behavioural and processual antecedents to board task

performance. Board processes were explicitly defined as links between board demography and board task performance of control and service. Specifically, Forbes & Milliken (1999) hypothesised three processes with a positive influence on the effectiveness with which boards perform their tasks. These insights paved the way for a new process-oriented research agenda.

The three key processes introduced by Forbes and Milliken were: 1). “Effort norms” – which depend on individual motivation and the norms in the board as a team. Strong effort norms can be expected to enhance the effort of individual group members (Steiner, 1972). Boards that have standards and expectations promoting high-effort behaviour among members are more likely to perform their tasks effectively (Forbes & Milliken, 1999). 2). “Cognitive conflicts” – the differences in ideas and opinions between the board members, “as disagreements about the content of the tasks being performed, including differences in viewpoints, ideas and opinions” (Jehn, 1995, p.258). 3). “Use of general and firm-specific knowledge and skills” which is a two separate construct, containing of an “input” variable that represents the knowledge and skills present on the board and a “process” variable that represents the way in which those resources are used by the board” (Forbes & Milliken, 1999, p.495).

All three processes are related to the board on a group-level. Forbes and Milliken further argued that board activities are related to particular attributes. At the meeting boards will have to handle complex tasks even if the members are just episodically a part of the team. As a team they will be particularly susceptible to “process losses” (Steiner 1972; Forbes & Milliken 1999).

In his framework Huse (2005) defined three subcategories of board process theories. While the first sub category explained the nature of the interactions taking place in the corporate governance arena, the second one was related to formal and informal structures and norms,

including board leadership characteristics. The third sub category included theories which explained boards' decision-making culture. Board members' competence is related to this culture and vice versa. Furthermore, in this framework the purpose of the firms is value creation based on sets of relationships and resources (Huse, 2005, 2007).

A number of studies empirically tested the Forbes and Milliken model (and derivations thereof) and generated important new knowledge. Zona & Zattoni (2007) showed that board effectiveness (the board's ability to successfully carry out their tasks) (Forbes & Milliken, 1999; Huse, 2005) is strongly influenced by board processes, but that different processes have different impacts on each of the board tasks. Use of knowledge and skills is positively and significantly relate to all three tasks: service, monitoring and networking (Zona & Zattoni, 2007). Van Ees et al (2008) and Huse and Zattoni (2008) demonstrated how trust in the board is a further explanatory variable for board task performance. If there is trust, aspects like openness, commitment and creativity will foster more cohesion in the board (Huse, 2007). Gabrielsson and Winlund (2000) examined the link between board's working style and performance in SMEs, contributing to a growing strand of literature examining board task performance in different organisational settings (van den Heuvel et al, 2006; Voordeckers, van Gils & van den Heuvel, 2007). In a recent study Zattoni et al (2012) confirmed a positive and significant relationship between effort norms and use of knowledge and skills (as described by Forbes and Milliken (1999)) on board control and board strategic performance, while cognitive conflicts only showed a significant relationship to the strategy task. In following-up this research an increased focus was directed towards the dynamics in boards as groups, which led the studies further forward, analysing board activities through team approaches.

2.5.2. The board as a group and a team

Research on board members as teams is a growing strand within board research. “Boards are first and foremost groups of human individuals” (He & Huang, 2011, p.1120), and “no board can provide significant value to an organisation unless its members truly operate as a team” (Conger et al, 1998, p.28). Following the notion that board members are not acting “in isolation” (Huse, 2005; Pettigrew, 1992) the studies focusing on dynamics and effectiveness in top management teams have also been incorporated within this literature.

Whilst research on boards as teams is recent, there has been a much longer tradition of research on top management teams (Pettigrew, 1992; Pfeffer, 1983). The latter has partially been underpinned by research into team roles. Within this research a team role model made popular by Belbin (1981, 1993) has been focused, analysed and tested through the years. Based on research on more than 200 teams conducting management business games at the Administrative Staff College, Henley, in the UK, Belbin identified nine team types. Further, Belbin (1981, 1993) proposed that people normally have a mix of roles and will have dominant and sub-dominant roles. Although there is considerably debate over the validity and reliability of the Belbin instrument (Furnham, Steele & Pendleton, 2011; Henry & Stevens, 1999), the research itself laid important foundations for research on team types and team members’ roles.

Research with a direct focus on boards as teams is more limited, but there are some articles where the subject is touched. Interactions between board members take place inside and outside the board room and are characterised by trust and emotions (Huse, 2005), stakeholder orientation (Huse & Rindova, 2001; Huse, 2005), power (Pettigrew & McNulty, 1995) form and frequency (Macus, 2002; Huse, 2005). Further, the use of this contextual decision-making culture plays an important role in board processes. Huse (2005) denoted openness and generosity (cohesiveness), preparedness and involvement (commitment), creativity and

criticality as examples thereof. Further, trust between board members increases directors' engagement and commitment (Roberts et al, 2005) and thus makes the most of directors' capabilities (Nicholson and Kiel, 2004). Conflicts, on the other hand, may trigger the sense of community (Sundaramurthy & Lewis 2003), but can improve the openness in the board. Thus, trust does not imply absence of disagreement but rather implies the quality of relationships between board members which are strong enough to handle challenging questions (Sonnenfeld, 2002). This, in effect, points to the need for both control and collaboration in governance (Sundaramurthy & Lewis, 2003). Finally, social ties among board members enhance mutual trust and respect and encourage insider directors to collect knowledge and skills from outsiders (Westphal, 1999).

Furthermore, the results from empirical studies on boards as teams are generally mixed and limited, but there are some findings. In a study from 2008 Magee and Galinsky stated that directors on a board are likely to automatically sort into an informal hierarchy based on the respect they have for each other's individual competence and influence. This informal hierarchy might be particularly influential in coordinating individual directors' contributions to a firm. In a recent article from 2011, He and Huang presented an empirical research of informal hierarchies in boardrooms. Findings indicated that a lack of clarity might lead to confusion and frustration, compromising the economic efficiency of the board members' interactions (He & Huang, 2011; Magee & Galinsky, 2008). At the same time, a board cannot work unless there are directors who can find common themes within divergent views and bring about a consensus (Leblanc, 2005).

In their study He and Huang (2011) further addressed five factors of informal board hierarchy: 1) the rank of a firm's CEO in this hierarchy, 2) the board's rank composition, 3) board size, 4) the firm's past performance and 5) environmental dynamism (He & Huang, 2011). They further defined a proxy for the clarity of a board's informal hierarchy on the

inequality of directors' board memberships (overall differences in the number of corporate boards where individual directors serve simultaneously). Based on panel data from US manufacturing firms in the period from 2001 to 2007 they found a strong support for a relationship between informal hierarchy and firm performance. In another paper from 2011, Machold et al (2011) focused on board team processes, investigating the effects of board leadership in small firms on board strategy. Team production theory (Blair & Stout, 1999) was applied to analyse small firms' strategic involvement. Based on data from 140 small firms in Norway collected in two different time periods, they found that leadership behaviours and processes have a greater impact on boards' strategy involvement than structural leadership characteristics alone (Machold et al, 2011). Based on social identity theory, Kaczmarek, Kimino and Pye (2011) studied the concept of fault lines from the group effectiveness literature to the study of board composition and dynamics with the underlying question of value-destroying implications of board schism. This study shed new light on the potential solutions for board members to apply when confronted with the problem of fractures. A long CEO tenure and multiple external board appointments of the majority of NEDs are characteristics that can be changed to improve board team performance (Kaczmarek et al, 2011).

When moving away from the traditional input-output approaches the research gradually defined models with more complex explanatory patterns. Within this research moderators and mediators have been defined.

2.5.3. Moderating and mediating effect in the board models

As reviewed above the development of corporate governance research has led to more process and behavioural orientated studies. A consequence of this development appears in a trend with moderators and mediators in research models. While the traditional models focused on a simple input/output approach analysing effects of boards' structure and composition on board

roles (Dalton et al, 1998; Johnson et al, 1996), recent research is based on analyses of board behaviours and board processes (Huse, 2007). Further, direct and indirect effects, as mediation and moderation, are included (Machold et al, 2011; Zattoni, et al, 2012; Kaczmarek et al. 2011; van Ees et al, 2009). The classic theoretical reference on this topic is Baron and Kenny (1986), who developed the moderator-mediator variable distinction in social psychological research.

The intention of testing for mediation is checking for interaction effects. The mediation caused by the mediator variable is thus developed as a causal model. In other words, this means that the mediator variable has been assumed to cause the affect in the dependent variable and not vice versa. Mediators explain how external physical events take on internal psychological significance. A moderator is a qualitative or quantitative variable that affects the direction and/or strength of the relation between an independent variable and a dependent variable. Whereas moderator variables specify when certain effects will hold, mediators speak to how or why such effects occur (Baron & Kelly, 1986).

Examples of mediating effects in recent literature are board processes and tasks on the relationship between family involvement and firm performance in small family firms (Zattoni et al, 2012). Huse et al (2009) explored the effects of the esteem of the women and employee-elected board members with creative discussions in the boardroom as a mediating variable.

Moderating effects such as the measure of busy boards (boards in which a majority of outside directors hold three or more directorships), the CEO tenure, the reward structure of executive directors, and the average number of non-executive directors on board committees were analysed in a model testing task-related fault lines on firm performance (Kaczmarek et al, 2011). In another study the leadership efficacy of the board chairperson is tested as a

moderator between recent changes in board composition and subsequent board strategy involvement (Machold et al, 2011).

Generally, process analyses by moderators and mediators have been applied in several studies during the last few years, representing a considerable part of current quantitative research. However, quantitative research has limited opportunities when building new theory or extending existing theory with new approaches. For such research qualitative studies have greater potential. With greater attention to context and process, research through direct engagement with the actors and settings involved in governance phenomena is of importance (Huse, Hoskisson, Zattoni, & Vigano, 2011; Pugliese et al, 2009, Pye & Pettigrew, 2005; McNulty et al, 2013).

However, quantitative as well as qualitative studies have previously been conducted within corporate governance and boards. Even if quantitative research is the most used one, there are several contributions within qualitative research. Qualitative research in corporate governance will be further reviewed in the next section.

2.5.4 Qualitative research on boards

Traditionally, qualitative research in boards has been limited, and there was only one study published before the 1990s (McNulty et al, 2013). Instead, the majority of corporate governance and board studies have been based on quantitative analyses. This might be due to various reasons, but the early approaches dealing with input-output models represented a tool well fitted for quantitative analyses of effects by input variables on output ones, as reported by several researchers (Daily et al, 2003; Finkelstein & Mooney, 2003,; Huse, 2007). More recently, the development of more complex board models and research on board processes have opened for other methods of research, which has also resulted in several qualitative contributions. Board dynamics and behavioural aspects suggest a field of corporate

governance in need of research focused on theoretical and empirical development through direct engagement towards and within the board room (Huse et al, 2011; Pugliese et al., 2009).

Compared with the current issues within corporate governance and boards, research should be conducted by quantitative and qualitative approaches (Huse et al, 2011). Further, there are variations in what comprises effective behaviour in different board contexts. This should be analysed by a qualitative approach, and various organisational levels as directors, boards, and organisation as well as inter-director relationships should be investigated to integrate micro- and macro level focus (Pye & Pettigrew, 2005).

In a recent review McNulty et al (2013) conducted a systematic review of 35 journals, with articles on corporate governance or boards. Out of 1210 articles they found 78 articles with a qualitative approach. The main results are reported below.

First, the extent of qualitative research varies between countries. Most studies are originated in Europe, with UK as the dominant country (McNulty et al, 2013). Mainly, the studies are conducted in a single country context with a few exceptions. Regarding methods, a wide range of alternative methods to collect data are available. The same review reported that the dominant qualitative method to explore governance issues is the interview, followed by archival data, observation, survey and finally participant observation (McNulty et al, 2013, p.8). Participant observations are rare, because it is hard to get access to such positions (Leblanc & Schwartz, 2007; Machold & Farquhar, 2013). Further, the majority of studies is based on one method of data collection, but a number of studies have used several methods. Usually, interviews are the main method which is combined with other (McNulty et al, 2013). Generally, multilevel studies are not common, and most of the studies are related to a group level (boards). Finally, national and relational studies are rare (McNulty et al, 2013).

Despite these advances, the qualitative part of board research is still underrepresented. There is a general call for new contributions. In a recent article Zattoni, Douglas and Judge (2013) urge governance scholars to use qualitative methods and to thereby “generate fresh new theoretical insights about corporate governance practices that are both rigorous and relevant” (Zattoni et al, 2013, p.1). In another article in the same journal, Bansal (2013) underlines that qualitative data can contribute to research of corporate governance by asking new questions, challenging existing assumptions and identifying new constructs (Bansal, 2013).

The distinction between quantitative and qualitative research should not be too hard. In his article, Pettigrew (2013) warns about the dangers of hard and fast distinctions between qualitative and quantitative research, agreeing with Eisenhardt and Graebner (2007). There have been several examples in former field research where combined qualitative and quantitative methods are applied (McNulty et al, 2013). Some of these studies have, however, been related to corporate governance codes (Westphal & Khanna, 2003; Zattoni and Cuomo, 2008).

2.5.5 Conclusions and gaps

These sections have reviewed the more recent literature on boards, where processes, behavioural aspects and team approaches are incorporated in the research. By means of these approaches the research has moved forward. Empirically, some of the conceptualised models and connections have been tested, but there are still more left (Hillman et al, 2008; Minichilli et al, 2009; 2012; Van Ees et al, 2008). First, there are a number of processes which are not yet understood. For example, the process of “use of knowledge and skills”, which was introduced by Forbes and Milliken already in 1999, has only received limited attention from board researchers.

As a result, an analysis of more comprehensive set of board processes is generally required. More specifically, processes related to use of knowledge and skills should be investigated further and in more detail. Second, much of the focus of empirical work examining board processes and board role performance has been limited to Continental Europe and South East Asia with a few contributions from UK. The Nordic countries, especially Norway, have only recently been analysed via the Norwegian board survey. Still, there is a need for more studies in this context. Finally, in former research qualitative approaches are underrepresented. There is a need for more qualitative research looking into boards by direct engagement towards and within the board room (Huse et al, 2011; Pugliese et al, 2009; Zattoni et al, 2013).

Dynamic capabilities, and absorptive capacity, contribute in this context by explaining why and how knowledge and information should be obtained and used within companies today. The “use of knowledge and skills” process in boards as suggested by Forbes and Milliken (1999), and the learning processes related to absorptive capacity, are thus similar. As a result, absorptive capacity should be a tool of analysing the process related to “use of knowledge and skills” in boards. The following sections will link existing literature on board processes, especially use of knowledge and skills, by the lens of dynamic capabilities and absorptive capacity.

2.6. Absorptive capacity

Companies are almost continuously exposed to new technologies, shortening product life cycles, transformations of working practices and turbulences in the external environment. Further, inside most companies the need for exchange of internal knowledge and information is enormous, and without a satisfactory flow of knowledge the different parts of the companies are unable to cooperate (Zahra & Pearce, 1989; Cohen & Levinthal, 1989). In addition, to secure a functioning decision-making process, conditions must be made. In a board context the information flow from and to the board is critical to secure a high quality

board task performance (Zahra & Pearce, 1989). Without the ability to learn, transfer and embed new knowledge, the long-term competitiveness will thus be exposed (Wang & Ahmed, 2007). A growing stream of research has investigated the how, and the extent to which, organisations are capable of learning and absorbing new knowledge (Augier & Teece, 2009; Birkinshaw, Nobel, & Ridderstrale, 2002; Dodgson, 1993; Kogut & Zander, 1992; Leonard-Barton, 1992; Lichtenthaler, 2009; Zander & Kogut, 1995; Flatten, Engelen, Zahra & Bretter, 2011a; Flatten, Greve & Bretter, 2011b). In this stream the concept "absorptive capacity" was derived as one of several dynamic capabilities (Zahra & George, 2002).

The roots of absorptive capacity are found in the organisational learning literature from the eighties. Fiol and Lyles (1985) and Levitt and March (1988) discussed the role of research and development in organisational learning and performance, and Kedia and Bhagat (1988) addressed the role of organisational characteristics in technology transfer (Volberda et al, 2010, p.933). Further, the absorptive capacity concept has links to other fields of learning theory as the work by Burgoyne. Burgoyne (1992) defined the learning organisation as “an organization that facilitates the learning of all of its members and continuously transforms itself in order to meet its strategic goals” (Pedler, Burgoyne & Boydell, 1997, p.1). Burgoyne further argued that the four fundamental processes of the learning organisation are: policy, operations, thinking and doing (Burgoyne, 1992). These processes are related to internal and external factors such as internal exchange of information, intercompany learning, participation and boundary workers (Pedler et al, 1997; Burgoyne, 1992). This learning perspective thus provided comprehensive aspects of learning at all organisational levels. Further, the learning processes and factors described by Burgoyne (1992) and Pedler et al (1997), are similar to learning processes described in research on absorptive capacity.

The absorptive capacity concept has also been defined at an individual, organisational and inter-organisational level (Volberda et al, 2010) and by several dimensions (Lane et al, 2006;

Lichtenthaler, 2009; Zahra & George, 2002). Research on absorptive capacity can thus contribute when learning processes are analysed in corporate governance.

Furthermore, this links very strongly to “use of knowledge and skills” which was proposed by Forbes and Milliken (1999) as one of three board processes, but the dynamic capabilities’ and absorptive capacity approaches might give an extended and more detailed view of knowledge and skills in boards.

2.6.1 Dynamic capabilities – an introduction

The dynamic capabilities perspectives go back to the resource-based view of the firm (Collis and Montgomery, 1995). Based on the assumption of maximising profits, Wernerfelt (1984) showed that if marginal costs decline and firm-specific optimal mark-up increases with market share, the two effects could balance each other out and produce similar prices for firms of very different sizes (Wernerfelt, 1984). This was an early approach to the dynamic capabilities’ theory. The term "capabilities" emphasises the key role of strategic management in appropriately adapting, integrating and reconfiguring internal and external organisational skills, resources and functional competences to match the requirements of a changing environment, (Teece et al, 1997). Collis (1994) was particularly explicit and formal in making the point that dynamic capabilities govern the rate of change of ordinary capabilities. While resource based view emphasised resource choice, dynamic capabilities emphasise resource development and renewal (Teece et al, 1997). Dynamic capabilities have further been defined as “the firm’s abilities to integrate, build and reconfigure internal and external competences to address rapidly changing environments” (Leonard-Barton, 1992; Teece et al, 1997, p.516). More recently, researchers have defined dynamic capabilities as “the capacity of an organisation to purposefully create, extend or modify its resource base” (Ambrosini, Bowman, and Collier, 2009, p.10; Helfat et al. 1997, p.1). In the next section the dynamic capabilities are further reviewed.

2.6.2 Dynamic capabilities - theoretical background

The resource-based view of the firm was criticised for ignoring the processes related to resources and instead assumed that they did exist. Considerations such as how resources were developed, how they were integrated in the firm and how they were released were under-explored in the literature (Teece et al, 1997). Dynamic capabilities perspectives attempted to bridge these gaps. By adopting a process as a buffer between firm resources and the changing business environment, dynamic capabilities help a firm to adjust its resource mix and thereby maintain the sustainability of the firm's competitive advantage, which otherwise might be quickly eroded.

The central focus of dynamic capabilities is thus on the degree of “fit” over time between an organisation’s changing external environment and its changing portfolio of resources and capabilities (Porter, 1996). Extending Teece’s (1997) research, Bowman & Ambrosini (2003) argued for four main processes in dynamic capabilities perspectives: reconfiguration, leveraging, learning and integration (Bowman & Ambrosini, 2003). Reconfiguration was described as the transformation of resources, while leveraging was the transfer related process of methods and experience from one part of the firm to another. Learning, which was itself defined as a dynamic capability, would be the tool for developing measurements of good and poor results. Integration was described as the process converting external new knowledge to internal knowledge. Collaborations and partnerships can be a source for new organisational learning. Similar to learning, building strategic assets is another dynamic capability. Moreover, these new strategic assets, like knowledge and technology, have to be integrated within the firm (Teece et al, 1997; Eisenhardt & Martin, 2000).

The dynamic dimension of this concept is thus closely related to strategic processes. In order to meet the challenges arising, there is a need for an organisation to learn quickly and to build strategic assets.

Furthermore, Teece et al (1997) pointed out that the degree of effective and efficient internal coordination or integration of strategic assets may also determine a firm's performance. Performance is related to specific organisational routines for gathering and processing information, and competitive advantage requires the integration of external stakeholders. Fast changing markets demand the ability to reconfigure the firm's asset structure, and to accomplish the necessary internal and external transformation (Amit & Schoemaker, 1993). Change is costly, and firms should develop processes to minimise low pay-off change (Teece et al, 1997, p.521). The capability of changing depends on the ability to evaluate markets and to quickly accomplish transformation ahead of the competition (Teece et al, 1997; Eisenhardt & Martin, 2000).

An investigation of different levels of dynamic capabilities and further a capability hierarchy was suggested. While Collis (1994) was the first one to propose different levels of dynamic capabilities, Collis (1994) and Winter (2003) distinguished between the modification of the resource base and the creation and extension of the resource base. Winter (2003) further developed the idea of a capability hierarchy. His hierarchy begins with operating capabilities or 'zero-level' capabilities which allow firms to earn a living in the present (in other words, these are the resource base). He then described first-order capabilities that allow for a change in zero-order capabilities to occur, for example they effect changes to the production process. Finally he considered higher order capabilities being the outcome of organisational learning which further results in creating or modifying a firm's dynamic capabilities. Zahra, Sapienza and Davidsson (2006, p.947) argued that an "infinite spiral of capabilities to renew capabilities could be conceived". They further commented that these capabilities would have the ability to change the way the firm solves its problems being "a higher-order dynamic capability to alter capabilities" (Zahra et al, 2006, p.921). Further, their article focused on possibilities of development of the regenerative dynamic capabilities. Regenerative dynamic

capabilities founded in the firm without any time or incitement for renewal will not necessarily give any improvements in a given situation and might even be a part of the reason for new problems in the organisation (Argote, 1999; Zahra et al, 2006).

The deployment of regenerative dynamic capabilities will also depend on how often managers perceive the need for this order of change, and this perception may be based either on external environmental characteristics, such as competitive rivalry, product lifecycles etc., or on personal characteristics, such as dissatisfaction with the current level of performance, or a cognitive frame towards risk taking. This reinforces Teece et al (1997), framework of processes, position and paths, and Antonacopoulou's (2006) argument that there is a constant connection between micro and macro contexts.

The arguments by Zahra et al (2006) about a higher-order dynamic capability for developing the regenerative dynamic capabilities is related to a learning process of a firm from internal and external sources. Ambrosini et al. (2009) further proposed in their definition of the higher order concept that a need for further creation, extension and modification of the firm's resource, is in the nature of the dynamic capability concept. These definitions and suggestions move the attention towards the theory of knowledge sources and use of knowledge and skills in firms.

The concept of "absorptive capacity" is directly linked to learning processes (Lane et al, 2006) and is defined as one of several dynamic capabilities (Zahra & George, 2002). The absorptive capacity concept thus represents a link between the learning theory and dynamic processes in firms, related to the development of knowledge resources and skills on an individual level as well as a group and an organisational level (Cohen & Levinthal, 1989; Todorova & Durisin, 2007; Zahra & George, 2002). A detailed review of this concept will be presented in the following sections.

2.6.3 Absorptive Capacity - an overview

Kedia and Bhagat (1988) first coined the term "absorptive capacity", but the contributions by Cohen and Levinthal (1989, 1990) are generally accepted as the first seminal research with respect to absorptive capacity. Cohen and Levinthal (1989, p.128) defined absorptive capacity as the "ability to recognise the value of new information, assimilate it, and apply it to commercial ends". Further research contributed to developments of the concept and with empirical research. The most cited articles on this concept are described in this table:

Table 1: Absorptive Capacity (AC) – a review of key contributions

Researcher(s)	Definition	Explanation
Cohen & Levinthal (1989)	“The firm’s ability to identify, assimilate, and exploit knowledge from the environment”	The first seminal paper on AC. A definition is derived and a conceptual framework defined. AC is measured by research and development (R & D)
Cohen & Levinthal (1990)	“The ability of a firm to recognise the value of new, external information, assimilate it and apply it to commercial ends”	Further development of the concept, individually and for the organisation as a whole. AC is defined as a process.
Zahra & George (2002)	“A dynamic capability pertaining to knowledge creation and utilisation that enhances a firm’s ability to gain and sustain a competitive advantage”.	Defines AC as the building of acquisition, assimilation, transformation and exploitation – to be a dynamic capability. A model outlining the conditions under which the firm’s potential and realised capacities can differentially influence the competitive advantage” is defined. Potential and realised absorptive capacity is defined.
Lane et al (2006)	“A firm’s absorptive capacity is the ability to utilise external knowledge through the processes of exploratory, transformative and exploitative learning”	The researchers reviewed 289 different papers from 14 journals and by means of thematic analyses were the contributions from these papers identified. They concluded that absorptive capacity as a concept holds much promise for furthering organisation and management research, but that its potential is suppressed by reification – tendencies in the literature to skate over assumptions, distort definitions and generally introduce inconsistencies that undermine the construct’s validity. They further defined three dimensions of AC, exploratory, transformative and exploitative learning and derived a conceptual framework.
Todorova & Durisin (2007)	“The ability of a firm to recognise the value of new, external information, assimilate it and apply it to commercial ends”	New input to and further development of the concept proposed by Zahra & George (2002). They introduced the importance of innovation and the importance of a social aspect through the whole process.
Zahra, Filatochev &	“Absorptive capacity denotes a firm's ability to identify, accumulate, process and use the	The article describes how AC processes are working inside an organisation. The role of boards is included, and the complementarity and substitutes between boards and absorptive capacity are discussed. The paper advances a conceptual

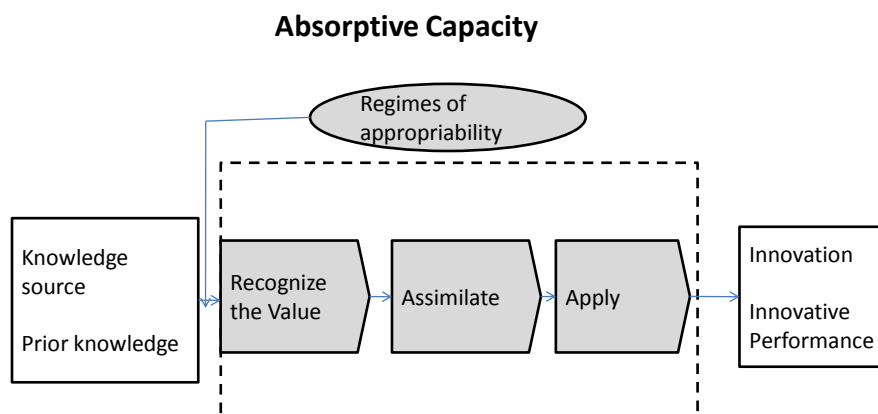
Wright (2009)	new knowledge gained from external sources.”	framework that clarifies the implications of low vs. high accountability (reinforced by board members) and low vs. high absorptive capacity for threshold companies' corporate entrepreneurship, but absorptive capacity in boards is not directly focused.
Volberda et al (2010)	Supports the definition by Cohen & Levinthal (1990)	Based on a review of 1213 publications a bibliometric analysis is conducted. Eleven clusters fields of absorptive capacity are derived and categorised. An extended conceptual framework is presented and explained.

A more comprehensive description of the existing research is implemented in the following sections.

2.6.4 Absorptive Capacity - the theoretical and conceptual development

With a theoretical background in cognitive and behavioural learning theory, absorptive capacity was introduced and defined by Cohen and Levinthal (1989, 1990) as recognition, assimilation and application of new information, which is commercially utilised (Cohen & Levinthal, 1990). Cohen and Levinthal further proposed that the level of prior related knowledge as well the type of knowledge source, are antecedents to absorptive capacity. They further put research and development (R & D) at the centre of firms' innovative processes by linking it to both learning and innovation. Further, 'regimes of appropriability' (spill overs and learning conditions) are specified to mediate between the prior knowledge levels and sources, and absorptive capacity. Finally, because levels of absorptive capacity are associated with levels of knowledge acquisition, assimilation and new knowledge creation, firms' innovation performance will be affected. Innovation is thus defined as the outcome. Innovative activities are thus predicted by learning and transforming processes associated with absorptive capacity. The full model is illustrated in figure 1:

Figure 1: Cohen and Levinthal (1989, 1990)



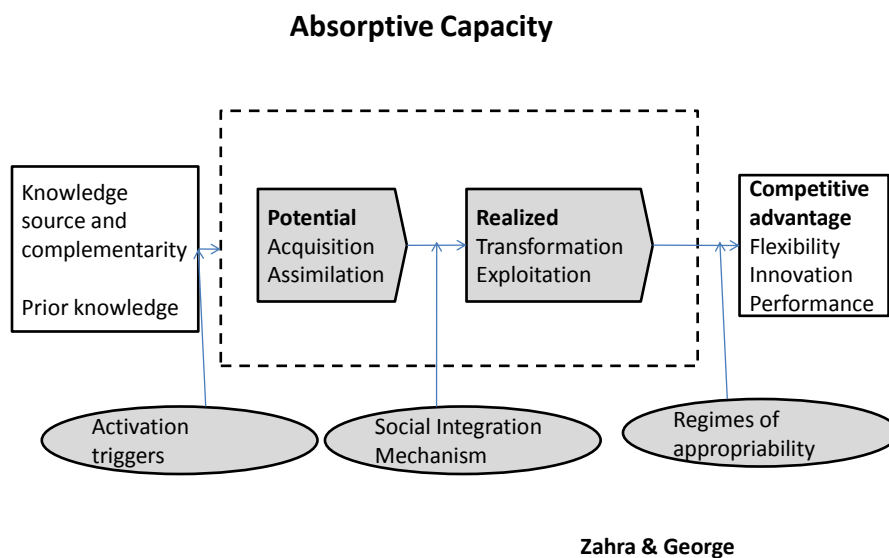
Cohen & Levinthal

It was proposed that a learning organisation normally will be an organisation in development (Cohen & Levinthal, 1989, 1990). With reference to studies in cognitive and behavioural sciences at the individual level Cohen & Levinthal (1990) stated that the individual needs prior related knowledge to assimilate and use new knowledge (Cohen & Levinthal, 1990; Ellis, 1965). Furthermore, earlier psychological research suggested that memory development is self-reinforcing, and that “the more objects, patterns and concepts being stored in memory, the more readily is new information, and the better is the individual in using them in new settings” (Bower & Hilgard 1981, p.424). Based on this research Cohen & Levinthal therefore proposed that the concept “creative capacity” from the psychology literature (Simon, 1985) is very similar to the concept absorptive capacity (Cohen & Levinthal, 1990). The theoretical underpinning of absorptive capacity thus ranges from the psychological emphasis on cognition and learning to the economic perspective on innovation and competition as described by research on dynamic capabilities perspectives.

Zahra and George (2000, 2002) contributed with a further theoretical and conceptual development of absorptive capacity. They proposed that the research in the area had culminated and gone into a certain track, with a need for a “much-needed dialogue on the definition and dimensions of absorptive capacity” (Zahra & George, 2002, p. 186). Absorptive capacity was defined as one of several dynamic capabilities, and they underlined strongly the dynamic aspect of the absorptive capacity by specifying two dimensions of the concept. Zahra and George thus defined a difference between potential and realised absorptive capacity, with an efficiency factor according for the difference between these two. The dynamic dimension was defined as the degree to which firms transform potential capacity to realised capacity (Zahra & George, 2002). Zahra and George further proposed: “A firm’s transformative capacity reduces the gap between potential and realised absorptive capacity, thereby improving its efficiency factor” (Zahra & George, 2002, p.196). The transformative

capacity thus defines to which degree the firm succeeds in creating realised absorptive capacity by transforming external knowledge to an internal one. Zahra & George's model is illustrated in figure 2:

Figure 2: Zahra and George (2002)



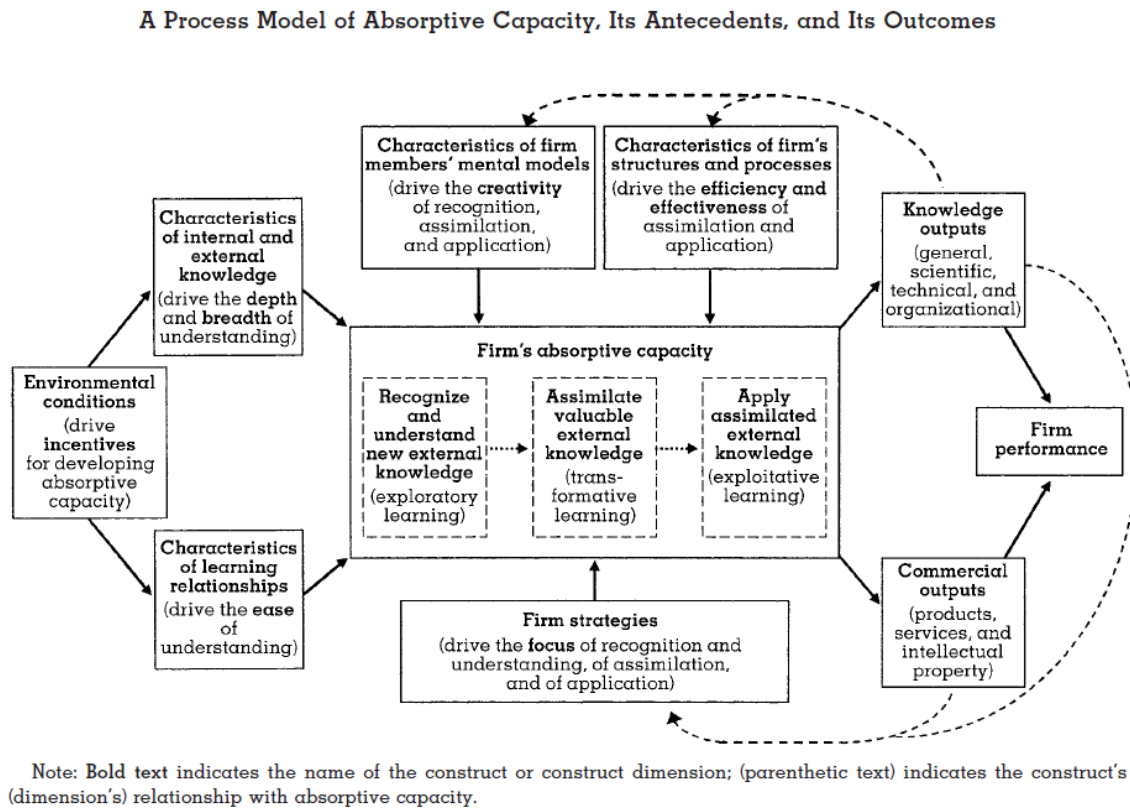
The antecedent "knowledge complementarity" describes the degree to which the former knowledge fits in with the actual needs in the organisation. The knowledge built up inside the firm is described as "past experience, learning by doing". The external information is described as "acquisitions and inter-organisational relations". These two sources create the foundations for further development of knowledge inside the firm. "Activation triggers" and "social integration mechanism" are contingencies in the model, while "regimes of appropriability" act as a moderator. The output in this model is defined as "competitive advantages", parted into "flexibility, innovation and performance".

The redefining and extension of the absorptive capacity concept contributed to an increased focus on the models and surveys conducted. Zahra and George thus upgraded the research

agenda with respect to absorptive capacity (Zahra & George, 2002). Even if Cohen and Levinthal (1989) defined absorptive capacity as a process, their operation of research and development (RD) spending as the predictor of innovative activity, still represents a static approach. Zahra and George moved the research a step forward by their consistent focus on absorptive capacity as a dynamic process. A second contribution was the introduction of the two contingencies "activation triggers" and "social integration mechanism" in their model. The "activation triggers" were described as all events, external and internal contributors that make the firm discover the need for new knowledge. "Social integration mechanism" focuses on the human, social and cultural aspect of absorptive capacity. Zahra and George proposed that "social integration mechanism" enhances the absorptive capacity by the transformation and exploitation of knowledge, while the triggers are related to acquisition and assimilation.

Lane et al (2006) developed both an extended definition, as well as a process model specifying the antecedents and outcomes of absorptive capacity. Their process based definition stated a firm's absorptive capacity to be the ability of utilising external knowledge through the processes of exploratory, transformative and exploitative learning (Lane et al, 2006), by which they introduce three dimensions, exploratory learning refers to recognising and understanding external knowledge which is similar to the concept potential absorptive capacity as defined by Zahra and George (2002). Exploitative learning is related to applying acquired knowledge for creating new knowledge, and it is associated with the concept of realised absorptive capacity (Zahra & George, 2002). Transformative learning is the assimilation of external knowledge to new valuable knowledge in the firm, linking the two processes by maintaining and developing knowledge over time. These three processes form a dynamic description of absorptive capacity, synthesising the theories from Cohen and Levinthal (1990) and Zahra and George (2002) (Lane et al, 2006). Lane et al's model is illustrated below:

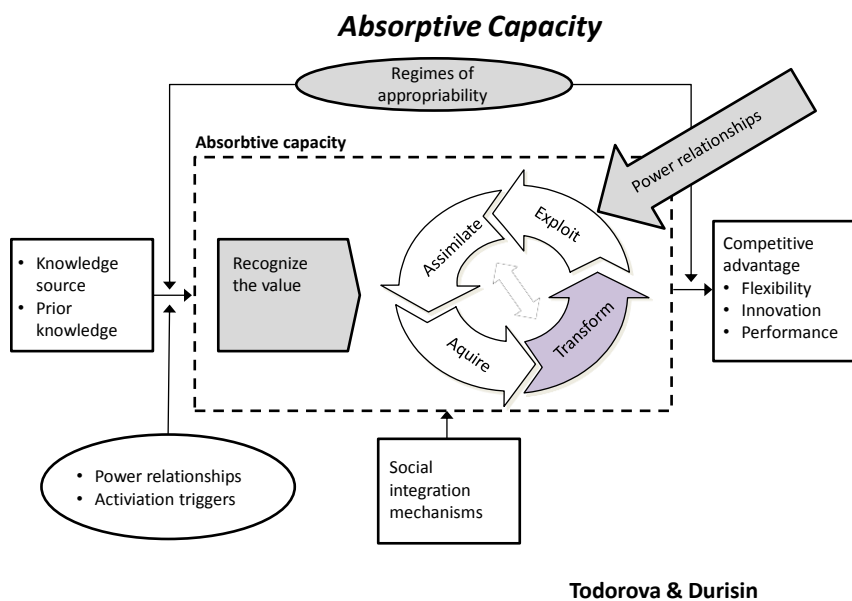
Figure 3: Lane et al (2006)



The dependent variable is firm performance, which is influenced by knowledge and commercial outputs. Antecedents are “characteristics of internal and external knowledge”, “environmental conditions” and “characteristics of learning relationships”. These antecedents are collecting the depth and breadth of understanding, the incentives for developing absorptive capacity and the ease of understanding. There is a notable difference in the specification of the independent variable in Lane et al (2006) compared with previous research. This research moved another step forward by specifying “the characteristics” of knowledge in contrast to applying the amount or use of knowledge and skills as earlier proposed. Moderators are “characteristics of firm members’ mental models”, “characteristics of firm’s structures and “firm strategies”, which is describing the focus of recognition and understanding. There are several internal relationships in the model.

A fourth contribution to the concept of absorptive capacity came from Todorova and Durisin in 2007. Todorova and Durisin (2007) criticised Zahra and George (2002) for omitting some of the dynamic aspects of absorptive capacity, even though the concept itself was defined as a dynamic capability. According to Todorova and Durisin (2007) the dynamic factors will work in different phases, via different explanatory variables and at different periods of time during a process or a project. In contrast to Zahra and George (2002), Todorova and Durisin redefined “recognizing the value” to be the first component as in Cohen and Levinthal’s (1990) conceptualisation. This model is illustrated in figure 4:

Figure 4: Todorova and Durisin (2007)



Todorova and Durisin (2007) further criticised the definition of ‘social integration mechanism’ by Zahra and George. They proposed that the effect can be positive or negative depending on the context and not just presenting a positive effect as Zahra and George argued. Drawing on research from innovation and learning, “power relationship” (Pfeffer, 1981) was asserted as an important factor for valuing and exploiting the knowledge (Contu &

Willmott, 2003; Dosi, Levinthal & Marengo, 2003). This concept explains why only some of the available new knowledge is used by the organisation, and why some organisations are better able to exploit external knowledge than others. Todorova and Durisin (2007) further argued that “thinking in cycles typical of evolutionary approaches to management studies” – was related to the dynamism of absorptive capacity – later referred as “feedback loops” (Volberda et al, 2010).

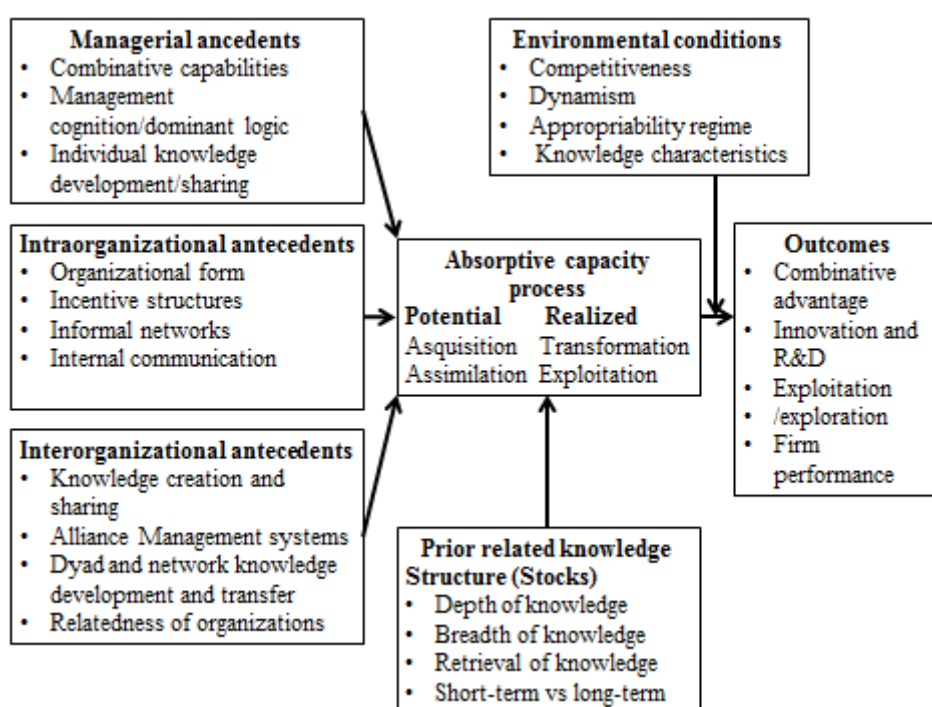
Zahra et al (2009) presented a framework which described the connection between absorptive capacity, board task performance, accountability, corporate entrepreneurship and dynamic capabilities. The starting point of the analysis was threshold companies, e.g. new companies which have finished their first period in the market, often representing a need for renewal and innovations for further development and value creation to take place. The role of the board is partly investigated in this article since the authors proposed absorptive capacity and constructive board activities as two complementary ways of bringing the companies over the threshold. They thus proposed that a good board performance and absorptive capacity in an organisation are substitutable. If the board members have no priority of creating innovations, further development or new business ideas in the company, the absorptive capacity itself can, to a certain degree, compensate for this lack of engagement in boards and vice versa (Zahra et al, 2009).

In their article Zahra et al (2009) further argued for the importance of knowledgeable development inside the organisation. In addition to traditional responsibility, board members have to secure the value of the company’s shares, and the authors focused on the general responsibility of every board member. They thus pointed out the necessity of making board members present new knowledge via information from their networks or by their own entrepreneurship. These issues are underlined to be important parts of the board activities. The paper advances a conceptual framework that clarifies the implications of low vs. high

accountability (reinforced by board directors) and low vs. high absorptive capacity for threshold companies' corporate entrepreneurship (Zahra et al, 2009).

The latest conceptualisation of the absorptive capacity concept was published in 2010. Volberda et al (2010) derived a reconceptualization based on a review of 2013 articles. By a bibliometric analysis which showed the major discrepancies in the organisation field, they developed an integrative model. This model identifies the multilevel antecedents, process dimensions and outcomes as well as the contextual factors that affect absorptive capacity (Volberda et al, 2010). They further stated that research on knowledge recognition and to certain degree assimilation, are dominating the field, while studies on knowledge exploitation are underrepresented. In their opinion “discussing absorptive capacity merely as a capacity without discussing the actual processes that link it to outcome variables” should not be regarded as an integrative process (Volberda et al, 2010, p.939). The full integrative framework is illustrated in figure 5.

Figure 5: Volberda et al, 2010 – an integrative framework of absorptive capacity



The conceptual definitions and developments described in this chapter will be utilised when reporting and discussing the results in chapter IV and V.

This section has reviewed the conceptual development of absorptive capacity during a period of about twenty years. The concept has further been widely applied in an organisational, inter-organisational and country context. Depending on the actual context the theoretical underpinning of the concept has been differently developed. I will review these levels in the next section.

2.6.5 Individual versus organisational absorptive capacity

Absorptive capacity has been defined at an individual, organisational and inter-organisational level (Volberda et al, 2010). The way absorptive capacity is communicated and shared between levels should thus be further discussed. Table 2 reports more details of these levels.

Cohen and Levinthal (1989, 1990), Zahra and George (2002), Todorova and Durisin (2007), Lane et al (2006) and Volberda et al (2010), all focused on the context of absorptive capacity. They further focused on the conceptual dimensions and whether or how these dimensions were applied. As reviewed above, their conceptual definitions deviate somewhat from each other. This results in different descriptions of the absorptive capacity processes. According to Cohen and Levinthal (1990), an organisation's absorptive capacity does not simply depend on the organisation's direct interface with the external environment. The transfers of knowledge across and within subunits may be distant from the original point of entry. A focus on the structure of communication between the external environment and the organisation, or among the subunits in an organisation will thus be necessitated. The firm's absorptive capacity will thus depend on the individuals who stand at the interfaces (Cohen & Levinthal, 1990).

The ability of transferring the knowledge across and within different parts of the firm will also be of importance. This capability will depend on the ability of transformation (Lane et al,

2006), realised absorptive capacity (Zahra & George, 2002) and power relationship (Todorova & Durisin, 2007). To understand the sources of a firm's absorptive capacity, the focus should be drawn to the structure of communication between the external environment and the organisation, among the subunits of the organisations, and also on the character and distribution of expertise within the organisation (Cohen & Levinthal, 1990).

In their 1990 paper Cohen and Levinthal further argued that absorptive capacity is path dependent because experience and prior knowledge facilitate the use of new knowledge. As a consequence the absorptive capacity is cumulative. This nature of absorptive capacity has not normally been focused in empirical studies, but was discussed in the literature of knowledge and spill overs (Schmidt, 2010).

Zahra and George (2002) analysed the transmission from individual to organisational absorptive capacity with their concept "knowledge complementarity", which describes the degree to which the existing individual knowledge fits in with the actual needs in the organisation. The knowledge which has been built up on the organisational level is described as "past experience, learning by doing". The external information is described as "acquisitions and inter-organisational relations". These two sources together present the foundations for further development inside the firm (Zahra & George, 2002). Absorptive capacity as a concept is thus related to individual, organisational and inter-organisational level (Volberda et al, 2010).

Empirical studies have been conducted on the various levels and in different contexts. In next chapter these contributions are further reviewed.

2.6.6 Research on absorptive capacity – empirical studies and results

Since the absorptive capacity concept was first introduced by Kedia and Bhagat (1988) and later Cohen and Levinthal (1989, 1990, 1994), a comprehensive strand of research has been

published. However, absorptive capacity has been, and partly is, a concept in development. As reviewed above, reconceptualization has been conducted on several occasions during these years. There are, however, a number of empirical studies (Lane et al, 2006), but they are mixed in what they show, in country context, in the level of analysis and in the way they operationalize absorptive capacity. The research itself has been reviewed by a couple of researchers. Details will be reported below.

Zahra and George (2002) reviewed the research in the period from Cohen and Levinthal to 2002, concluding that researchers had studied the effects of absorptive capacity at different levels with multiple measures of the construct. They stated that an implicit consensus of the role and outcome of absorptive capacity had been developed as “a set of firm abilities to manage knowledge” (Zahra & George, 2002, p.186). However, different dimensions were presented. A reconceptualization was thus suggested, defining absorptive capacity as a dynamic capability. Empirical results on country-, inter-organisational and organisational level were further reviewed as described in the table below:

Table 2: Zahra and George (2002) - review of absorptive capacity research

Level	Study	Modelling	Measurements	Outcome effects	References
Country	Conceptual and quantitative	ACAP* as a predictor of innovation systems/innovative output and as an exploitation of technology	Related to research and development	Supported	Mowery & Oxley (1995); Keller (1996); Liu & White (1997)
Inter-organisational	Quantitative	ACAP as a predictor of organisational learning	8 measures based on valuing, assimilating and commercialising new knowledge	Similarities between two firms' knowledge and knowledge processing systems are more important than one firms knowledge	Lane & Lubatkin (1998)
Organisation	Quantitative (5) and qualitative (1)	Organisational learning	Mixed	1) RD** creates a capacity to assimilate and exploit new knowledge 2) Higher levels of IT management influenced both dimensions of ACAP 3) Lack of ACAP of the recipient is a major source of "stickiness" 4) Presence of ACAP stimulates an effect on internal RD by increased external R & D 5) ACAP is an integral part of a learning system, and creation of crises keeps firm on forefront of knowledge development.	Cohen & Levinthal (1990); Boynton, Zmud & Jacobs (1994); Szulanski (1996); Veugelers (1997); Cockburn & Henderson (1998) Kim (1998)

ACAP – absorptive capacity (*)

R & D – research and development (**)

In early research the organisational level was the main focus, while some research was conducted on inter-organisational and country level. Research related to R&D development was dominating.

Later, Lane et al (2006) conducted another review of 289 absorptive capacity papers from 14 journals. Their conclusion was that the research in the area was driven by critical assumptions which had led to a conceptual reification, resulting in a stifling of research in this field (Lane et al, 2006). The context for the review was developed from Cohen and Levinthal's (1989, 1990, 1994) research. In an overview Lane et al (2006) stated that 78% of the reviewed research used Cohen and Levinthal (1990) as a minor citation with little or no discussion, and almost 50% of these papers did not discuss the dimensions of absorptive capacity. Only four papers (1.4%) extended or refined the construct (Lane et al, 2006, p.840). Further, 35% of the papers discussed absorptive capacity without mentioning the construct dimensions, and a predominance of the papers characterised the construct as a capability. Details from the review are reported in table 3 below.

Table 3: Lane et al (2006) – review of absorptive capacity research

Construct usage	Percentage rate of all reviews	Dimensions of the constructs				Views of the constructs			
		None	One	Two	Three	Capability	Resource	Both	Neither
Definition extended	1.4 %	0	0	0	4	4	0	0	
Used in hypothesis, proposition or model	5.2 %	1	1	2	11	10	2	1	2
Key building block for hypothesis or proposition	15.6 %	6	3	14	22	29	6	6	3
Background or minor citation	77.9 %	94	65	33	33	72	34	4	115

Lane et al (2006) finally examined the citations of the reviewed papers. They reported that 52% had not been cited by any other paper, while 18% neither cited any other paper nor were cited by one. Based on average, citations 6 papers were selected as the most important ones in the absorptive capacity research. These papers are reviewed in table 4 below, together with the article by Cohen and Levinthal (1990) and seminal papers from the period after Lane's research, based on the following criteria:

- The most important papers as stated by Lane et al (2006) (*).
- Papers with qualitative studies since these are a limited part of the research in the field (**).
- Highly cited papers from the years after Lane et al.

Table 4: Categorisation of absorptive capacity research

Researcher(s)	Category	Sample/Data	Theory	Method/Results
Cohen & Levinthal (1990)	Conceptual and empirical	1719 business units – 318 companies in 151 lines of businesses in US – manufacturing sector	Organisational learning – economic theory – quantitative analysis	ACAP* is used as predictor for innovative activity. Research and development create a capacity to assimilate and exploit new knowledge.
Szulanski (1996)*	Empirical	271 respondents on 122 transfers on 38 practices	Organisational learning/strategic management – quantitative analysis	ASAP* as predictor of effective transfer of best practice within the company. Lack of ACAP made difficulties in initiating best practices in a company.
Mowery, Oxley & Silverman (1996)*	Empirical			Empirical investigation on transfer of technological capabilities – how collaboration changes the relationship between a firm's technological portfolio and those of its alliance partners. Inter-firm knowledge transfers within strategic alliances
Lane & Lubatkin (1998)*	Empirical	Quantitative study in pharmaceutical – biotechnology RD	Inter-organisational learning based on relative absorptive capacity	Similarities of the partners' knowledge were positively related to inter organisational learning. Relative ACAP has higher explanatory power than RD spending.
Koza & Lewin (1998)***	Empirical	Qualitative – longitudinal case study in public accounting industry	Applying and extending a coevolution-nary perspective	They elaborate and interpret the coevolution of one alliance network to explore the dynamics of alliances over time
Kim (1998)**	Empirical	Case study of manufacturing firm	Organisational learning theory, organisations as learning systems	Organisational learning as a function of ACAP*, the capacity to assimilate knowledge and create new knowledge. ACAP* is integrated in the learning system. Crisis keeps firm on forefront of knowledge.
Zahra & George (2002)*	Conceptual and empirical	Review of the research from Cohen & Levinthal to 2000 – conceptualisations and re-conceptualisations. Conceptual	Dynamic capabilities	Defines ACAP* as the building of acquisition, assimilation, transformation and exploitation – to be a dynamic capability. A model outlining the conditions when the

		paper which suggests their reconceptualization		firm's potential and realised capacities can differentially influence the competitive advantage"
Lane et al (2006)	Conceptual and empirical	Reviewed 289 different papers from 14 journals and by means of thematic analyses identified the contributions from these papers to the research of absorptive capacity.		They concluded that absorptive capacity as a concept holds much promise for furthering organisation and management research, but that its potential is suppressed by reification – tendencies in the literature to skate over assumptions, distort definitions and generally introduce inconsistencies that undermine the construct's validity.
Easterby-Smith et al (2008a)	Empirical	Qualitative – based on three case studies from three different sectors. A survey from 2003 till 2005 of 3 different companies in 3 different industries, which is collecting diversified information of processes related to AC. Introduces systemic and episodic power as concepts related to the processes	Absorptive capacity	The study demonstrates the role of both systemic and episodic power in relation to absorptive capacity, and how different forms of knowledge can move across boundaries.
Lichtenthaler (2009)	Empirical	An empirical study on 175 large and medium sized industrial German companies		The model was supporting the multidimensional nature and the contribution of absorptive capacity in the explanation of inter-firm discrepancies in profiting from external knowledge
Volberda et al (2010)	Conceptual and empirical	Based on a review of 1213 publications a bibliometric analysis is conducted	Bibliometric analysis	Eleven main fields of absorptive capacity are derived. A conceptual framework is presented and explained.
Flatten et al, (2011b)	Conceptual empirical	A measure of absorptive capacity: Scale development and validation Original Research Article	Development of valid scales for measurement of absorptive capacity	Measurements of absorptive capacity were derived based on a review of articles from 10 management journals. 36 items were defined, tested and validated. Four dimensions were defined in accordance with Zahra and George

Flatten et al, (2011a)	Empirical	An empirical study with data collected by a questionnaire for firms randomly drawn from the German Chamber of Industry and Commerce	General theories of absorptive capacity and firm performance in SME's.	The study is testing a mediating influence of Strategic Alliances on the relationship between absorptive capacity and firm performance in SME's. The study supports a positive relationship between ACAP, strategic alliances and firm performance.
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* *ACAP: Absorptive Capacity*

Most recently, Volberda et al (2010) in their article of absorbing the absorptive capacity concept identified 11 clusters of topics in absorptive capacity research based on a review of 1213 publications between 1992 and 2005. A bibliometric analysis was applied (Volberda et al, 2010). Based on this analysis trends in absorptive capacity research were described, and table 5 below describes the main factors in this research. The clusters “knowledge flow and capabilities”, “governance modes” and “technological innovation and firm performance” were the three fastest growing ones, while “R&D at industry level” and “managerial antecedents” still were the most comprehensive ones in terms of number of publications. Volberda et al (2010) derived an integrative framework of absorptive capacity founded in this bibliometric analysis as reviewed earlier in section 2.6.4.

Table 5: Volberda et al (2010) - review of absorptive capacity research (ordered by number of publications)

Clusters	Growth 1992-2005	Comments
R&D at industry level	Growth around average	
Managerial antecedents	Growth around average	Level growth during the period
Inter-organisational antecedents	Growth around average	Strong growth from 2001
Environmental conditions	Growth around average	
Intra-organisational antecedents	Growth around average	Stronger growth from 1998
Tangible outcome variables of AC*	Growth around average	
Knowledge flows and capabilities*	Fast growth	Strong growth from 1998
Realised AC **	Growth below average	
Governance modes **	Fast growth	
Technological innovation and firm performance **	Fast growth	Strong growth from 2003
Organisational innovation **	Growth below average	Growth from 2000 until 2003

Same indicated size (*)

Same indicated size (**)

2.6.7 Absorptive capacity - a review of applied methods and measurements

As reviewed in section 2.6.6, the empirical research on absorptive capacity has been conducted in a firm context. Various measurements have been employed. In appendix I, table 33, measurements from this research are reported.

After the introduction of absorptive capacity in about 1990, the empirical studies were mainly based on proxy's based on R & D (research and development)) (Cohen & Levinthal, 1990; Kim 1998). This sort of measurement is, however, related to absorptive capacity as a resource and not as a process. The resource approach to absorptive capacity has been criticised by several researchers (Lane et al, 2006; Todorova & Durisin, 2007; Van den Bosch et al, 1998; Volberda, 2010; Zahra & George, 2002). More recently, other methods and measurements, related to a process perspective of absorptive capacity, have been derived.

Szulanski (1996) and later Szulanski et al (2004) developed multiple item measurements, which have been a foundation for further recent developments. Out of nine measurements three were related to competence (general, technical and managerial) and four were related to knowledge of the firm as a team and the decision-making culture, while two are derived for strategic knowledge.

Jansen et al (2005) built and tested hypotheses based on the article from Zahra and George (2002). This research was four dimensional, with acquisition, assimilation, transformation and exploitation as the phases of absorptive capacity. In 2009 another two articles shed light to measurements and methodologies. Cadiz et al (2009) conducted a study of possible measurements of absorptive capacity. They reintegrated a component of value identification which was originally proposed by Cohen and Levinthal (1990) and most recently recommended by Todorova and Durisin (2007). By statistical methods they derived nine items for the measurements of absorptive capacity in firms. The method was based on absorptive capacity related to three dimensions, assessment (identification and filtering of

valuable information), assimilation (conversion of new knowledge into usable knowledge) and application (using the knowledge). Each of these three categories was measured by three items.

Later in 2009, Lichtenthaler conducted a survey based on a sample from large and medium sized technological firms, where the hypotheses were built on the model derived by Lane et al (2006). His focus leaned towards technology and innovations. In this model he derived 25 items measuring three dimensions of absorptive capacity, exploratory learning, transformative learning and exploitative learning (Lichtenthaler, 2009).

In a study from 2011b Flatten et al developed multidimensional measurements of absorptive capacity in a firm context. This study was initiated by a qualitative approach and finished by quantitative analyses. More precisely, these measurements were based on relevant prior literature, a series of pre-tests and two large survey-based studies of German companies. The established procedures for scale development (Churchill, 1979; DeVellis, 2003) were employed (Flatten et al, 2011b).

Articles from ten management journals were reviewed. Based on this review, Flatten et al (2011b) identified more than fifty items. Next, the measurements were pretested on a group of executives who were asked to point out any items that were either too ambiguous or difficult to answer. A group of eleven academic experts provided detailed comments that led to the modification of some and the elimination of other items, resulting in a scale of 36 items (Flatten et al, 2011b). This construct has four dimensions as suggested by Zahra and George (2002). The measurement scale was further tested and validated by two German surveys (Flatten et al, 2011b).

Still, there is not a consensus how to measure absorptive capacity, and all these measurements are derived in a firm context. The overall issue when measuring absorptive capacity is, however, related to the description of the learning processes. Whether we are analysing in a

board context or a firm context should not necessarily disturb the definitions of the learning processes. These measurements will thus be a starting point of defining items in the quantitative study. Chapter III will thus outline in more detail how absorptive capacity is operationalized in this research.

2.6.8 Conclusions and gaps

As reviewed above, absorptive capacity has been defined in several ways by different scholars, but there are similarities. Based on the existing research I will define absorptive capacity as

“a concept which describes the process of knowledge and information flows through

- 1) internal and external exploration and collection
- 2) the internal transformation, processing and refining and
- 3) the organizational and economic exploitation

in boards, companies, organisations or communities”. This definition encompasses the individual, organisational and inter-organisational levels. In this thesis the analyses will be related to absorptive capacity in boards, and the concept is thus mainly employed at a board level.

Further, the literature review has shown an interesting and extensive description of this concept. However, there are a number of problems with the research. First, although a model of the antecedents and consequences of absorptive capacity is implied, it is not fully derived and delineated, and the latest models have not yet been tested (Volberda et al, 2010). Second, absorptive capacity is defined as a process, but is mainly operationalized through the construct of R&D spending which is better described as a resource (Lane et al. 2006). Third, even though the definition implies that absorptive capacity is a multi-dimensional construct, its proxy-fixation to R&D expenditure makes it one-dimensional (Wang & Ahmed, 2007). Finally, even if the transformation part of the absorptive capacity process is defined and

described, further details in the process related description are lacking. Declaring that transformation is conducted since the exploitation is obvious, is not satisfactory on its own (Schmidt, 2010).

Further, in the twenty years since Cohen and Levinthal (1989, 1990) introduced their seminal article, empirical research on absorptive capacity has been conducted on individual, organisational and national level with analyses that are based on one-dimensional or multidimensional models in the studies. As reviewed, an overwhelming part of this research has, however, just briefly mentioned the absorptive capacity construct, and a number of articles have never been cited by other researchers (Lane et al, 2006; Volberda et al, 2010; Zahra & George, 2002). Thus, there are still gaps left in this area, and most reviews have consequently pointed out that new and more extensive research is needed to analyse and integrate the full concept (Lane et al, 2006, Volberda et al, 2010, Zahra et al, 2002).

2.7 Areas for further research on boards through the lens of absorptive capacity

From the years after 1970 when Mace described the way boards of directors rubber stamped decisions from management, via input/output approaches of board task performance, through the eighties and nineties with the seminal articles by Zahra and Pearce, Forbes and Milliken, several milestones in board research were passed. In the next twenty years, several researchers argued that far greater attention should be paid to the behaviour of the board of directors to establish a deeper understanding of board activities (Huse, 2005, 2007; Pye & Pettigrew, 2005). More recently, there has been more attention to board processes and behaviour, new and valuable insights to the board room are available. Empirical studies and analyses have further confirmed significant results in the models. However, there is still a call for further and new contributions in this research. In one of the first attempts to examine board processes, Forbes & Milliken (1999) developed a conceptual model to illuminate the complexity of board dynamics. In their model Forbes and Milliken (1999) defined three processes in boards,

“Effort norms”, “cognitive conflict” and “Use of general and firm-specific knowledge and skills”. All the three processes are related to the board as a group (Forbes & Milliken, 1999, p.495). Thus far there has just been a limited empirical testing of their model (Minichill et al, 2009; van Ees et al., 2009; Zona & Zattoni, 2007).

Further, evidence suggests that task performance is not static (Huse & Zattoni, 2008; Roberts et al, 2005) and neither are the antecedents. Strategic management theory with its focus of the dynamic aspect of decision-making and processes is another theoretical lens. The concept “dynamic capabilities” has its background from this theory as it is a part of the resource based view of the firm as reviewed in chapter 2.2.3. The limitation in other presented theories might be compensated by an investigation of “dynamic capabilities” and the research related to this concept from other arenas. The concept “absorptive capacity” is defined as one of several dynamic capabilities and fits in this context. Lane et al. (2006) and Volberda et al (2010) urged scholars not only to build theory in relation to absorptive capacity, but to explore and test the construct in non-R&D contexts. A fertile context for such research is corporate governance and boards of directors for a number of reasons. First, according to resource dependency theory, boards are “boundary spanners” linking the organisation with its external environment (Hillman et al, 2003; Lynall, Golden, & Hillman, 2003; Pfeffer, 1972). As such, they are an important mechanism for transferring knowledge and skills into the organisation and absorptive capacity as a construct may shed light on the process and effectiveness of this knowledge and skills transfer. Second, as outlined above, a substantial strand in board research is concerned with boards and value creation, and the processes, interactions and context within which board members create value (Gabrielsson & Huse, 2004; Huse, 2007, 2009). The insights from the dynamic capabilities literature, and specifically absorptive capacity, may enhance the value-adding board literature by a) explicitly modelling dimensions of learning as variables in board processes and b) using absorptive capacity to

understand diachronic processes. Finally, despite its relevance to board research, as far as I know, no studies have thus far analysed absorptive capacity as a dynamic capability of boards. The article presented by Zahra et al (2009) is focused towards board activities, but considers absorptive capacity as an alternative to firm performance. Boards are thus introduced in relationship with absorptive capacity, but the focus on absorptive capacity and the processes related to this concept goes towards the firm and not towards the board itself. As a result, there is still a gap in applying absorptive capacity in an analysis of the board as a group, focusing on the contribution absorptive capacity might present in this context.

Finally, the board members as strategic working groups will need to hold essential parts of their knowledge and skills, as well as belonging to other groups or networks where new and additional knowledge is available. Knowledge related to market and competitors and knowledge related to the specific firm are both critical for the quality of board activities. Even if existing models suggest knowledge and skills as considerable sources for new information related to boards and board tasks, there is still an important point missing in the research: None of these variables capture how knowledge, skills and information are traced, shared and developed among board members for further use as a key source for the decision-making in boards. This part of board research should be further developed. Quantitative and qualitative approaches should be applied (Zattoni et al, 2013) and combinations of them represent an option (Eisenhardt & Graebner, 2007; Pettigrew, 2013).

2.8 The conceptual model

The following sections develop the conceptual model. The basis is recent research on boards where the impact of board processes on board task performance is examined. I will conduct an analysis based on the Forbes and Milliken model, and especially extend the process designated as “use of knowledge and skills”. Forbes and Milliken (1999) propose the process “use of knowledge and skills” to mediate the relationship between the antecedent “presence of

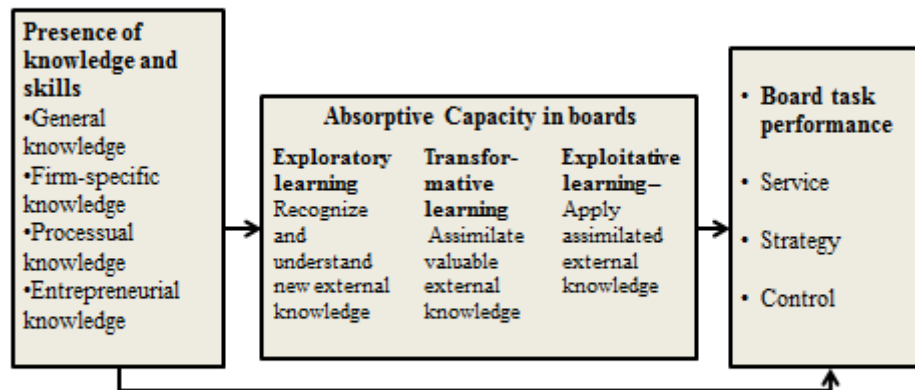
knowledge and skills” and the outcome “task performance”. “Use of knowledge and skills” is also a part of the "decision-making culture" in a value creating board (Huse, 2007).

Further, “presence of knowledge and skills” is proposed to have a positive impact on “use of knowledge and skills”, and the mediating effect of “use of knowledge and skills” on “task performance” is proposed to be positive (Forbes & Milliken, 1999), and a positive and significant relationship between presence and knowledge and skills and strategic involvement has been confirmed (Machold et al, 2011). Furthermore, a significant relationship between “use of knowledge and skills” and board control and advisory task performance is also confirmed in former research (Minichilli et al, 2012; Zattoni et al, 2012; Zona & Zattoni, 2007),

Absorptive capacity is defined as a dynamic capability (Zahra & George, 2002), for which “prior knowledge” and “knowledge source” are proposed to be antecedents (Cohen & Levinthal, 1989; 1990; Todorova & Durisin, 2007; Zahra & George, 2002). The antecedent to the process proposed by Forbes & Milliken (1999), and the antecedents proposed when conceptualising absorptive capacity are thus similar. As a result, absorptive capacity should be a tool of analysing the process related to “use of knowledge and skills”. The three dimensions defined by Lane et al (2006), exploratory learning, transformative learning and exploitative learning will elaborate the procedural description.

The conceptual model is thus suggested as described in figure 6:

Figure 6: The conceptual model



This model contributes to existing literature in several ways. First, the model introduces a new concept within corporate governance and boards, absorptive capacity. Second, the impact of presence of knowledge and skills on board task performance will be analysed for the three tasks defined by Zahra and Pearce (1989), control, service and strategy. Third, several dimensions of learning processes are included in the analyses (exploratory, transformative and exploitative learning). Fourth, primary data are applied (Daily et al, 2003).

Before the hypotheses are derived further details of the models are described below.

2.8.1 The consequences

As consequences in a model analysing possible effects of absorptive capacity on boards, several dependent variables could be considered. Cohen and Levinthal (1990) used innovation as the dependent variable, while Zahra and George (2002) and Todorova and Durisin (2007) argued for competitive advantage (flexibility, innovation and performance) as dependent variables. Lane et al (2006) defined a model with firm performances as the consequences.

When deriving a model for absorptive capacity in boards, the equivalent variable will be board task performance because that is the cognitive outcome of the board as a team (Forbes & Milliken, 1999). Board task performance has been defined in different ways. Forbes and Milliken (1999) divided board performance in control and service. In the “service” concept strategic performance was partly included. Zahra and Pearce (1989) defined the tasks as strategy, control and service. Huse (2005) presented a more detailed description of the main actual board tasks: Board strategy involvement, strategic decision-making, output control, as internal control, behavioural control, quantitative control and qualitative control, reputation building and networking, advice and counsel and mentoring and collaboration. Several options of consequences could have been applied, but since the analysis is fertile with respect to the implementation of absorptive capacity in board research, there is no reason to extend the number of dependent variables in this analysis. Just one board task could have been satisfactory, but since the nature of absorptive capacity itself might have various impacts on the single board tasks, I find it better to analyse the three board tasks, control, strategy and service. These tasks are defined in several research reports with some minor differences in labels and measurements (Forbes & Milliken, 1999; Huse, 2007, 2009; Zahra & Pearce, 1989). I will apply Zahra and Pearce’s definition of board tasks – control, service and strategy (Stiles & Taylor, 2002; Zahra & Pearce, 1989).

2.8.2 The antecedent.

The seminal board models and frameworks (Forbes and Milliken, 1999; Huse, 2007, 2009; Zahra & Pearce, 1989) integrate knowledge as a resource to boards. The knowledge resources are related to both general knowledge and firm specific knowledge.

The main antecedent in this study will be “the presence of knowledge and skills”. Forbes and Milliken (1999) describe two different dimensions of the presence of knowledge and skills, “firm-specific knowledge and skills” and “functional area knowledge and skills”. While the

“firm-specific knowledge and skills” refer to the activities and operations by the firm as well as management issues, the “functional area knowledge and skills” refer to the general business as accounting, finance, marketing and the firm’s relationship to the environment (Zahra & Pearce, 1989).

Further, in research on absorptive capacity various knowledge concepts have been introduced as antecedents to the absorptive capacity process. While Cohen and Levinthal (1989) and Todorova and Durisin (2007) argued for “knowledge source” and “prior knowledge” as antecedents, Zahra and George (2002) kept the same two, but further included “knowledge complementarity” (the degree to which the individual source of knowledge fits in with the common source of knowledge). The two research traditions (board research and dynamic capabilities) which are merged in my thesis have thus related their models to similar antecedents, which support the choice of antecedents in this analysis. The antecedent will thus be defined as presence of knowledge and skills (Forbes & Milliken, 1999). The knowledge will be based on measurements of general as well as firm specific knowledge, and individual and common knowledge and competence will be included (Lane et al, 2005, Lichtenthaler, 2009). Further details on measurements are reported in chapter III.

2.8.3 The mediators

Lane et al. (2006) developed an extended definition as well as a process model specifying the antecedents and outcomes of absorptive capacity. Absorptive capacity was described by three dimensions, exploratory learning, transformative learning and exploitative learning. The three defined dimensions (Lane et al, 2006) each contribute to high lighten different parts of the processes related to absorptive capacity, and complementarities between these dimensions might be present (Lichtenthaler, 2009; Zahra & George, 2002). Instead of testing absorptive capacity as one mediator, I will use these three dimensions to investigate how the different

processes of learning on boards are affecting board task performance. On the basis of these assumptions and the research questions, the following hypotheses are presented:

2.8.4 Hypotheses for testing

The hypotheses will be based on the research questions and the conclusions from the literature review. The research questions were defined in chapter I: **"What is the effect of absorptive capacity on board task performance? How can the effect of absorptive capacity on board task performance be described and explained?"**

Based on the literature review the main proposition that is being investigated in this thesis is: ***"Absorptive capacity contributes with an explanation of the way "use of knowledge and skills" is related to board task performance"***.

Further, the main proposition will be investigated by a quantitative and a qualitative approach. While the quantitative analysis will deal with the relationship between absorptive capacity and board task performance, the qualitative study will investigate how this relationship can be explained. The main hypothesis in the quantitative analysis will thus be: ***"Absorptive capacity mediates the relationship between presence of knowledge and skills and board task performance"***. No hypothesis will be tested in the qualitative part, but the investigation will be based on the second research question: ***"How can the effect of absorptive capacity on board task performance be described and explained?"***

As reviewed in section 2.6 and 2.8.2 absorptive capacity is defined by three dimensions: exploratory learning, transformative learning and exploitative learning. The main hypothesis will be individually tested for each dimension and simultaneously for all three dimensions. For the quantitative analysis the main hypothesis will thus be tested by the following four hypotheses with sub-hypotheses:

1. Exploratory learning mediates the relationship between presence of knowledge and skills and board task performance.

This hypothesis will be tested for the control, service and strategy tasks as explained in section as explained in section 2.8.1 and stated in the three sub-hypotheses below:

1a: Exploratory learning mediates the relationship between presence of knowledge and skills and board control performance.

1b: Exploratory learning mediates the relationship between presence of knowledge and skills and board service performance.

1c: Exploratory learning mediates the relationship between presence of knowledge and skills and board strategy performance.

2. Transformative learning mediates the relationship between presence of knowledge and skills and board task performance,

which will be tested for the three tasks by the following three sub-hypotheses:

2a: Transformative learning mediates the relationship between presence of knowledge and skills and board control performance.

2b: Transformative learning mediates the relationship between presence of knowledge and skills and board service performance.

2c: Transformative learning mediates the relationship between presence of knowledge and skills and board strategy performance.

3. Exploitative learning mediates the relationship between presence of knowledge and skills and board task performance,

which will be tested by these sub-hypotheses:

3a: *Exploitative learning mediates the relationship between presence of knowledge and skills and board control performance.*

3b: *Exploitative learning mediates the relationship between presence of knowledge and skills and board service performance.*

3c: *Exploitative learning mediates the relationship between presence of knowledge and skills and board strategy performance.*

Finally, the three dimensions of absorptive capacity will be tested simultaneously by the following hypothesis:

4. *Exploratory learning, transformative learning and exploitative learning mediate the relationship between presence of knowledge and skills and board task performance,*

which will be tested by these sub-hypotheses:

4a: *Exploratory learning, transformative learning and exploitative learning mediate the relationship between presence of knowledge and skills and board control performance.*

4b: *Exploratory learning, transformative learning and exploitative learning mediate the relationship between presence of knowledge and skills and board service performance.*

4c: *Exploratory learning, transformative learning and exploitative learning mediate the relationship between presence of knowledge and skills and board strategy performance.*

The hypotheses will be tested by methods which will be detailed reviewed in chapter III. The analyses will be based on existing measurements from former research when such measurements exist, and new measurements based on existing research on related subjects

when other options are missing. The measurements will be reported in chapter III, and the results from the analyses will be reported in chapter IV.

Furthermore, chapter III will review methods for the qualitative study, and the results for this study will be reported in chapter IV.

III. Methodology and methods

3.1 Methodology - the general part

3.1.1 Introduction

This chapter reviews methodology and the methods applied in the thesis. As mentioned in the introduction chapter, the aim is to explore and explain the concept absorptive capacity in a board context. Methodological choices are essential when conducting a study. First, in this chapter a general overview of methodology is presented. Second, the research design and methods underpinning the thesis will be described and discussed.

Since existing research on the absorptive capacity concept in this context is none existing or limited, I will have to lean on research on board tasks, processes and behaviour on the one hand (Forbes & Milliken, 1999; Huse, 2007; Mooney & Finkelstein, 2003; Machold et al, 2011; Minichilli et al, 2012; Van Ees et al, 2009; Wan & Ong, 2005; Zahra & Pearce, 1989; Zattoni et al, 2012; Zona & Zattoni, 2007) and research on absorptive capacity in other contexts on the other (Cohen & Levinthal, 1989, 1990; Easterby-Smith et al, 2008a; Lane et al, 2006; Lichtenthaler, 2009; Todorova & Durisin, 2007; Volberda et al, 2010; Zahra & George, 2002,).

As reviewed in chapter II, research on absorptive capacity in a board context is, as far as I know, non-existent. Further; there are only few qualitative studies on absorptive capacity (Volberda et al, 2010), and a recent review of research on corporate governance and boards detected that just about 12 per cent of the studies had a qualitative approach (McNulty et al, 2013). Researchers have called for combined studies (Eisenhardt & Graebner, 2007; Pettigrew, 2013). For a nearly emerging research crossing subject boundaries, such as this one, data collection and analyses based on various methods can shed better light on such a new research field. While quantitative analyses contribute through explanations of

relationships between variables or lack thereof, a qualitative case study will contribute by describing how and why relationships exist and how processes link the variables together (Saunders et al, 2009). I will thus utilise a combination of a quantitative analysis and a case study. My case will be located to the health sector, as was one of the cases in Easterby-Smith et al's study (2008a).

My research will thus be based on empirical data from quantitative research and on my observations, interviews and collected records from the case study. The intention is to develop and test causal relationships between the variables in the quantitative part and to develop an extended and modified model in the qualitative part. Since qualitative as well as quantitative approaches will be used in the thesis, both methods will be reviewed in this chapter.

3.1.2 The theoretical background to research methods

All research is based on one or several research questions. The research questions were presented in chapter I and were further developed in section 2.8.4: **"What is the effect of absorptive capacity on board task performance? How can the effect of absorptive capacity on board task performance be described and explained?"**

In chapter II theories on boards and absorptive capacity were reviewed and hypotheses derived. These hypotheses will be tested in the next chapter, and the results will be analysed and discussed in chapter V. For data collection and analysis the methods are playing the core role. The main issues connected to the choice of methods are:

- the choice of research method based on these hypotheses (in the quantitative part)
- how to collect (in the qualitative part) and utilise the empirical data (in the quantitative part) to secure the methodologically sound answers to the research questions
- How to analyse and interpret the empirical material to make correct and valid conclusions and develop a real contribution to further research

Choice of research methods is thus crucial in all research projects. The best data collection might be misinterpreted if the wrong methods are applied in the analyses. Using an abusive or biased method will result in conclusions which are not reliable or even totally wrong. All methods are, however, characterised by their own strengths and weaknesses.

This chapter reviews the main attributes of general methodology and more specific attributes of the methods applied in this thesis. The reliability and the validity of a research design are further discussed from a qualitative and a quantitative perspective. First research methodology is reviewed.

Research methodology includes all parts of the research project from the choice of measurements, the selection of observation units, sampling, data collection and choices affiliated to the questionnaires and the observations (Robson, 2002; Yin, 2009).

The theoretical foundations of the methodologies are imperative when selecting methods. The design defines the structure and orientation of a study, presenting a logical element to draw inferences regarding casual relations among variables under investigation (Nachimas and Nachimas, 1981).

3.1.3 Research design

Yin (2009) defines research design as "the logical sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions" (Yin, 2009, p.28). The research design will thus represent the definition and the planning of the full research process from its start to the end. In between there will be a number of major steps, including the collection and analysis of relevant data. Research design is further aimed to attain "precision, logic, tightness and efficient use of resources" (Oppenheim, 1992, p.7), and includes selection of research methods, sampling, data collection, analysis and interpretation (Nachmias & Nachmias, 1981).

The design should be well founded and thoroughly developed. A quality research design is a comprehensive plan, developed after intensive studies of the questions to be researched, and it will be working as a guide and as a control unit of the entire research program (Saunders et al, 2009).

The most important tool for the evaluation of a research design is its validity and reliability. Ghauri and Grønhaug (2010) stated four tests to evaluate the quality of research design: construct validity, internal validity, external validity and reliability (Ghauri & Grønhaug, 2010). In social sciences research is often non-experimental. The researcher is not in a position to interfere with or manipulate the natural setting of the organisation. A non-experimental research will thus be conducted. The reliability and validity will be tested as proposed by Ghauri and Grønhaug (2010) and reported in chapter IV.

3.1.4 Research approach

All research is either explicit or implicit philosophical stances. Practically, no particular research question will fit exactly in with one orientation, but the philosophical approach will have an impact on choice of methods and the implementation of the analyses (Saunders et al, 2009). All research processes will thus be related to the underlying philosophical thinking.

Further, there are two major ways of thinking about research philosophy: ontology and epistemology. Each contains important differences which will influence the thinking about the research process. Epistemology represents as described by Saunders, Lewis and Thornhill (2009), the theories of knowledge and “concerns what constitutes acceptable knowledge in a field of study” (Saunders et al, 2009, p. 112). It further deals with issues of how knowledge is derived and how it should be tested and validated (Saunders et al, 2009). The word itself goes back to the Greek language and is described as the nature and origins of knowledge and the limits of human understanding.

Ontology represents the second major dimension. Traditionally listed as a part of the branch of philosophy known as metaphysics, ontology deals with questions concerning what entities exist or can be said to exist, and how such entities can be grouped, related within a hierarchy and subdivided according to similarities and differences. Further, ontologies question if facts can be discovered objectively (Martin & McIntyre, 1994). Focusing on the nature of reality, the ontologies claim that the world is mind-independent, and questions are raised of the assumptions researchers have about the way the world operates and the commitment held to particular views (Saunders et al, 2009. p.110).

In social science inquiry the major philosophical doctrines for verification of theoretical propositions are defined by different approaches. While Denzin and Lincoln (2005) categorise them as positivism, post-positivism and constructivism, Saunders et al (2009) report positivism, realism, interpretivism and pragmatism. These categories will be further reviewed below.

The positivism paradigm claims that knowledge is gained through continuous interplay between theory and observation, and the aim is to verify empirically theoretical explanations (Robson, 2002). In the epistemological tradition positivism is characterised as objective, and the research will normally be concerned with facts rather than impressions (Saunders et al, 2009).

Positivism can further be described by some central characteristics as stated by Saunders et al, (2009, p.145):

- A world outside ourselves does exist
- The physical and social reality is independent of those who observe it
- Observation of this reality, if unbiased, constitutes scientific knowledge.
- The objective reality might be studied in an objective manner, and a cumulative knowledge of the objective world is attainable.

It is frequently advocated that the positivist researcher will be likely to use a highly structured methodology in order to facilitate replication (Gill & Johnson, 2002), and the emphasis will be on quantifiable observations and statistical analysis. However, this may not necessarily be the case since it is possible to adopt some of the characteristics of positivism in qualitative research (Saunders et al, 2009).

The positivism approach was criticised by several researchers, arguing that the core challenge in human sciences is related to the analyses of human beings, as well as how we are thinking and acting, which will naturally differ from researches in other sciences (Hussey & Hussey, 1997). Other approaches differ in this respect and might thus fit better with human sciences.

Realism is a branch of epistemology which is similar to positivism by assuming a scientific approach to the development of knowledge. According to this position there is a reality independent of the mind, and what the senses show us as a reality, is the truth (Saunders et al, 2009). Furthermore, the realistic scientific approach to knowledge implies that the collection of data and the understanding of those data are based on the same reality (Saunders et al, 2009).

In contrast to positivism and realism, interpretivism places greater emphasis on the social aspect of knowledge. It is necessary for the researcher to understand differences between humans in their role as social actors. The interpretative approach can be described by these main attitudes as stated by Smith (1983):

- There is no objective social reality. There are only diverse interpretations of the same reality.
- This interpretation of the reality can just be mapped by researchers who study how people interpret and make sense of a single social phenomenon.
- It is probably impossible to develop certain cumulative knowledge, because of the different methods of interpretation and understanding the social phenomena.

- There exist no laws which are the right ones in all contexts.

Social science research will partially be closer related to an interpretivist approach since this research might differ from other research branches where there is a clear focus on physical objects. In some fields of social science research the challenge will thus be to enter the social world of the research subjects and understand the world from their point of view (Saunders et al, 2009). Further, different researchers will capture the same phenomena in different ways and derive different results and interpretations.

Therefore, an interpretivist perspective might generally fit well in with research on human beings. Particularly within board of directors, where the social aspect plays a certain role and board task performance is complex and unique (Huse, 2007), this perspective is thus appropriate. Especially in qualitative research such as the case study in this thesis, the researcher has the opportunity to be very close to the groups or persons who are studied, facilitating an insightful understanding of the research subject. Denzin & Lincoln (2005, p.13) described such qualitative research as “the socially constructed nature of reality” and stated that “the situational constraints shape inquiry” (Denzin & Lincoln, 2005, p.5). Therefore, qualitative research in social sciences in general, and more specifically in this thesis, fits well with an interpretivist perspective. However, there is still a potential for theory development from qualitative data through coding and interpretative procedures (Miles and Huberman, 1994), which enables certain generalisations of knowledge. That part of this research is thus closer related to a positivistic perspective.

Finally, pragmatism focuses on an external multiple view with a major intention of answering the research question. In this view the researcher should study what is of interest and value in different ways, “in which you deem appropriate, and use the results in ways that can bring about positive consequences within your value system” (Tashakkori & Teddlie, 1998, p.30).

The pragmatist approach is, however, not employed in this thesis. Instead, it is based on a positivistic and interpretivist view. As reviewed above, the positivistic approach is related to analyses in a value-free way, underpinning surveys and testing of hypotheses, establishing the causal relationships between concepts, and the researcher is independent of the research subject (Creswell, 2009). A research based on a positivist approach will thus be based on observable phenomena as data and facts, and causality and possible generalisations are focused (Saunders et al, 2009). Furthermore, quantitative research is often based on a positivistic approach as the survey analysis in this thesis will be.

Interpretivists perceive researchers as being part of the research with their own conceptual orientations. Textual analyses are normally employed (Creswell, 2009). In this perspective subjective and social phenomena are focused on, and the social reality behind the details in a situation should be analysed (Saunders et al, 2009). Further, a socially constructed and multiple approach is related to the nature of reality (Saunders et al, 2009). The case study of Healthy will be related to an interpretivist approach, but an extended and modified framework based on the analysis will be elaborated, which moves the study beyond the philosophy of interpretivism.

Finally, when developing the analyses inductive or deductive approaches can be employed. In next section, these approaches are further reviewed.

3.1.5 Inductive versus deductive approach to research

With a deductive approach, a theory, hypotheses and research design are developed. A counterpart is the inductive approach, in which data are collected and theory is developed as a result of the data analysis. Further, deduction is related to positivism, while induction is more related to interpretivism (Saunders et al, 2009).

Robson (2002) lists five sequential stages through which deductive research will progress (Saunders et al, 2009, p.124):

1. Deducting a hypothesis from the theory
2. Expressing the hypothesis in operational terms
3. Testing the operational hypotheses
4. Examining the specific outcome of the inquiry
5. If necessary, modifying the theory in the light of the findings

An attempt is then made to verify the revised theory by going back to the first step and repeating the whole cycle (Robson, 2002; Saunders et al, 2009). In the quantitative part of this thesis where the hypotheses are tested by an existing survey, the deductive strategy is applied.

The inductive method moves the opposite way. The researcher will start the project with an open mind, collecting all relevant information and then eventually systematising and analysing the results, which might be further developed to new theories and contributions to existing research (Martin & McIntyre, 1994). Research using an inductive approach is likely to be particularly concerned with the context in which such events were taking place. Therefore, the study of a small sample of subjects might be more appropriate than a large number as associated with the deductive approach (Saunders et al, 2009). Researchers in this tradition are more likely to work with qualitative data and to use a variety of methods to collect these data in order to establish different views of phenomena (Easterby-Smith et al. 2008b). The inductive approach will be employed in the case study of Healthy.

3.1.6 The unit of analysis

In the ontological and epistemological debates related to social science research, the unit of analysis can be holistic or individualistic. The holistic approach is focusing on behaviour and human aspects in different contexts, while the individual approach has its focus on a single individual and his or her inducements and behaviour (Creswell, 2009).

In the individual approach single persons will be the research units, while holistic approaches are connected to analyses in a complex interaction between the persons in the actual context (Creswell, 2009). These arguments will lead to a collection of data in the real population context. Absorptive capacity is a multi-level concept, which may be related to all dimensions as persons, organisations or countries, representing individual or holistic approaches. I use it at a board level in the quantitative analysis, while it is augmented by the individual perspective in the case study.

3.1.7 Study description

In a research process two different categories of new knowledge might be collected:

- Knowledge/information which has never been developed or discovered earlier,
- Knowledge which is supporting and further developing existing knowledge

The last one is the most usual one, while the first one might appear occasionally, challenging existing knowledge (Saunders et al, 2009).

Research is further usually divided in several main categories - the exploratory, descriptive and the explanatory studies. Combinations of descriptive and explanatory studies are common (Saunders et al, 2009). In all studies two main requirements are imperative:

- The empirical material has to be appropriate and valid
- The empirical material has to be credible and reliable

An exploratory study is used to find out “what is happening; to seek new insights; to ask questions and to assess phenomena in a new light” (Robson, 2002, p.59). Further, descriptive research is “to portray an accurate profile of persons, events or situations” (Robson, 2002, p.59), while explanatory studies are used to establish causal relationships between variables (Saunders et al, 2009). This thesis will build on existing research within corporate governance and boards. The quantitative study will be conducted by descriptive and explanatory analyses, while the qualitative research project is associated to exploratory studies.

3.1.8 Triangulation

Denzin (1978) introduced the term “triangulation” from navigation and military strategy to formalize the concept of combined methodologies to when and how to collect data from various sources. Later Denzin and Lincoln (2005) specified that triangulation is actually a combined methodology to study a specific phenomenon. This can be either a “between-method”, providing cross-validation of outcomes, or a “within method”, using a variety of techniques within a stated method to gather information about an aspect of the research that will explain the outcome.

Another utilisation of triangulation was described by Creswell (2009). Based on previous work, he proposed three models of combined designs: the two-phased design, the dominant-less dominant design, and the mixed-methodology design. In a two-phase design, the researcher conducts a qualitative phase of the study and a separate quantitative phase of the study. The advantage of this approach is that the two methods are clearly separate, and the researcher is able to present thoroughly the assumptions behind each phase. The disadvantage is that the connection between the two phases may appear as weak.

In a dominant-less dominant design, the researcher presents the study within a single, dominant method with one small component of the overall study drawn from the alternative

method. The advantage of this approach is that it presents a consistent methodological picture in the study and still opens for explanations from other approaches.

In a mixed-methodology design, the researcher would mix aspects of the qualitative and quantitative methods at all or many methodological steps in the design. This approach takes advantage of both quantitative and qualitative approaches and fully uses the inductive and deductive thinking. This thesis will methodologically lean to the two-phase design with the stated hypotheses tested by a quantitative analysis, followed up with a more detailed case study where the findings from the quantitative part are further investigated.

3.1.9 Data collection

Generally, data might be collected in several ways such as experiment, survey, case study, action research, grounded theory, ethnography and archival research (Ghauri & Grønhaug, 2010; Saunders et al, 2009, p.141). As reported above, survey research and a case study will be employed in this thesis.

Surveys are effective tools to “get opinions, attitudes and descriptions as well as for capturing cause-and-effect relationships” (Ghauri & Grønhaug, 2010, p.118). Surveys are further usually associated with the deductive approach and are used to answer “who, what, where, how much and how many” questions. They are thus related to exploratory and descriptive research (Saunders et al, 2009). Questionnaires are often employed, and large amounts of data are collected in standardised forms. Finally, the data collected can be analysed quantitatively by statistical tools (Gauri & Grøndal, 2010).

To explore, explain and analyse causal relationship between variables the researcher will further need to control the data collection. To obtain valid answers to questions in social research, the simultaneous influence of many variables should be eliminated with the aim of isolating the cause of one effect. Controlled inquiry is thus absolutely essential. Further, the

measurements will have to be derived in a way to minimise confusions and misunderstandings, and as reviewed above, a systematic creation of one or more hypotheses subjected to an empirical test is needed to have the theories tested and confirmed or denied (Burns, 2001).

Case studies are often associated with descriptive or exploratory research, without being restricted to these areas (Ghauri & Grøndahl, 2010; Yin, 2009), and defined as “strategies “for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence” (Robson, 2002, p.178). Further the context is highlighted, since “the boundaries between the phenomenon being studied and the context within which it is being studied are not clearly evident” (Saunders et al, p.146). A case study thus differs from surveys where the possibilities of understanding and describing the context are limited. Case studies will be further reviewed in section 3.3.1. Below quantitative and qualitative research is further reviewed.

3.1.10 Quantitative and qualitative research

Quantitative research is “predominantly used as a synonym for any data collection technique (such as a questionnaire) or data analysis procedure (such as graphs or statistics) that generates or uses numerical data In contrast, qualitative research is used predominantly as a synonym for any data collection technique (such as an interview) or data analysis procedure (such as categorising data) that generates or use non-numerical data” (Saunders et al, p.151).

As reviewed in the previous sections, quantitative research is generally underpinned by positivism (Clarke, 2001). Quantitative research is further closely related to a deductive approach where hypotheses based on the theory are tested and analysed (Robson, 2002). In contrast, qualitative approaches allow researchers to avoid the limitations of the positivism through a greater capacity to investigate how events and activities are linked together. Further,

the individual interpretations of the activities will be included (Bryman, 1988). The qualitative approach is present, but underrepresented within corporate governance and board research (McNulty et al, 2013).

As noted above, quantitative research will typically be deductive. Qualitative research is often inductive in its manner. In quantitative research hypotheses are normally derived at the outset of the research project. This is not necessary in a qualitative approach. Further, the role of the researcher differs substantially. In quantitative research, the researcher is ideally an objective observer that neither participates in, nor influences, what is being studied. In qualitative research, however, it is presupposed that the researcher can learn the most about a situation by participating and/or being immersed in it. These basic underlying assumptions of both methodologies guide and sequence the types of data collection methods employed (Miles and Huberman, 1994).

Since qualitative data typically involve words and quantitative data involve numbers, some researchers will propose that one is better (or more scientific) than the other. A more neutral consideration will be that each method fits in its own context, and that a detailed contextually interpretation should be conducted before selecting the best method for a research. This statement was already in 1967 supported by Glass and Strauss: "We concluded that both quantitative and qualitative methods are important for verification and generating of the theories, independently of what the focus is. The focus is just dependent on the context of the research, the interests and abilities of the researchers and what sort of materials which is required to generate or verify theories. In several cases, both types of data are required", (Glaser & Strauss, 1967, p.17-18). Miles and Huberman (1994) underline the close relationship between the two methods, quoting D.T.Campbell (qualitative researcher) "all research ultimately has a qualitative grounding" (Miles and Huberman, 1994, p. 40).

Based on these arguments and the identified gaps in the domain of board research, I concluded to utilise quantitative and qualitative methods in this thesis. Qualitative and quantitative approaches are supplementing each other. When investigating a fertile research field such as absorptive capacity in a board context, a combination of the two methods may generate a broader foundation for further research. This combination is referred to as multiple methods (Saunders et al, 2009), and this choice is increasingly advocated within business and management research (Curran and Blackburn, 2001; Pettigrew, 2013b). Details of the two methods are further reviewed below.

3.2 Quantitative research

Quantitative research is normally placed closer to law findings in other sciences, and the aim is to deduct and explain significant relationships between the variables for further generalisation to the whole population or to an equivalent research field.

The quantitative method is thus founded on the supposition that methods can be developed to measure the social reality by numbers, and information from the reality can be analysed by statistical methods and techniques. Survey research is further the most common quantitative approach in the social science field (Bryman, 1996). A survey research's capacity is its possibility of generating quantifiable data on large numbers of people who are known to be representative of a wider population.

Further, in quantitative research several units are typically included, and the information which is collected, is as stated above, presented by numbers. Furthermore, the information is to a certain degree, predefined by the researcher. Since the intention of employing this method is to collect a high volume of data to be standardised and systematically analysed, it is impossible to treat one single unit differently from the rest of the responses from the research

participants. Categorisation has to be executed before the empirical survey is conducted. This feature entails that

- the concepts have to be carefully developed
- the categorisation enables measuring the results in numbers (Jacobsen, 1997)

Existing statistical information might be utilised in quantitative analyses when the available statistics fit well in with the research subjects and the research questions. In this research an existing survey (The Norwegian Value Creating Board Survey) (Huse, 2009) is available and will be the data source in the quantitative part of the thesis. This survey is based on Huse's (2007) framework as explained in chapter II. The response rate is satisfactory, and the survey is covering items which are closely related to existing empirical research on absorptive capacity. Details on the selection of items from the Norwegian Value Creating Board Survey are reported in section 3.10. I will thus utilise existing statistics in the quantitative part of the thesis with the consequence that questionnaires and the sample of respondents are defined outside this research. The data collection in the case study was conducted separately and will be further reported in section 3.13 when qualitative research has been further reviewed.

3.3 Qualitative research

In this section qualitative research will be reviewed. In the first part qualitative research in general is presented, while the next section reviews case studies.

3.3.1 The conduct of qualitative research

Qualitative research is typically characterised by a data collection of non-standardised data with analyses conducted through the use of conceptualisation (Saunders et al, 2009). Further, “qualitative research is a situated activity that locates the observer in the world” (Denzin and Lincoln, 2005, p.3), and “the research builds complex, holistic pictures, analyses words, reports, detailed views of informants, and conducts the study in natural setting” (Creswell,

2009, p.15). Finally, qualitative research covers “detailed descriptions of events, situations and interactions between people and things, providing depth and detail”, (Patton, 1980, p.12).

The ideal type of qualitative study has thus several key attributes. One of the most important ones is flexibility in design. It is normally impossible to specify the details in advance, but instead an indication may be noted in the design, reporting at what point further decisions will be made (Robson, 2002). This absence of clear rules and recommendations for qualitative research means that the researcher can be tempted to work in an ad hoc rather than planned, systematic manner (Mason, 1996). However, since the data are collected close to the researcher in a defined context, the possibility of observing details as well as latent and underlying factors is typically present. The data collection is also normally conducted over a period of time, which is especially important when observing processes (Bryman, 1996).

Another advantage is the opportunity the researcher has got to be flexible, since the theoretical and purposive sampling and data collection can be adjusted during the study (Mason, 1996; Silverman, 2001). The specific relevance lies in the ability to understand processes, participants’ experiences, complexity, and to address context, emotions, values and cultures (Denzin & Lincoln, 2005).

Furthermore, some researchers argue for the desirability of mixing qualitative and quantitative methods within a study, provided the contribution of each is recognised (Creswell & Plano-Clark, 2007; Eisenhardt & Graebner, 2007). The thesis will thus follow the view and advice from Creswell and Plano-Clark (2007) and Eisenhardt and Graebner (2007) by mixing the two methods. The quantitative analysis will deduct existing, if any, causal connections between presence of knowledge and skills, absorptive capacity and board task performance. However, absorptive capacity is a dynamic and not a static variable which is related to processes (Todorova & Durisin, 2007; Zahra & George, 2002). The qualitative analysis contributes by investigating and describing such processes to develop a full picture of the concept. The

intention of the qualitative part will further be to collect several explanations of the concept and its importance in a specific empirical setting. These might not be clearly observable by quantitative research.

Further, qualitative research can be conducted by several methods. Depending on the methods of information collection and the contexts, Creswell (2009) described five different subgroups of qualitative studies: case study, grounded theory study, phenomenological study, biographical study and ethnography. While a biographical study is related to one specific person's life, a phenomenological study "describes the meaning of the lived experiences for several individuals about a concept or a phenomenon" (Creswell, 2009, p.51), and the grounded theory study is a study directed towards theoretical explanations of a case or a situation. Further, ethnography is an interpretation of cultural or social systems, while a case study, which will be conducted in this thesis, is a "bounded system or a case (or multiple cases) studied over time through detailed, in-depth data collection involving multiple sources of information» (Creswell, 2009, p.61). The case study in this thesis will be based on data from Healthy. Healthy is presented in section 3.12. An inductive approach will be applied since the data will first be collected and then explored and analysed (Saunders, 2009).

The case study approach will be further reviewed in the next section.

3.3.2 Case studies

The case study is a "research strategy which focuses on understanding the dynamics present within single settings" (Eisenhardt, 1989b, p.534). Case studies may further be multidimensional, covering a case from several different sources. The case study design in this study will mainly follow the recommendations by Yin (2009) and Eisenhardt (1989b). Yin (2009) described four parts of a case study:

1. Design the case study

2. Collect the case study evidence,
3. Analyse the case study evidence
4. Develop the conclusions, recommendations and implications

Single cases may be used to confirm or challenge a theory, or to represent a unique or extreme case, and they are also ideal for revelatory cases where an observer may have access to a phenomenon that was previously inaccessible (Yin, 2009).

This study will be based on one single case. The information will be collected from a public Regional Health Company in Norway (Healthy). This company is responsible for specialist health services for 2.7 million people. With 70,000 employees and a total budget of NOK 58 billion in 2012, this is a big business unit in Norway. There are 14 members in the board, with 5 of the members elected by and from the employees. A case study with data source triangulation (Yin, 2009) will be conducted. Further, the data will be collected by observations at the board meetings, interviews with the board members and analysis of existing documents. These documents will be internal ones such as strategies, planning documents, protocols etc. and external, mainly based on articles in media. Healthy will be detailed presented in section 3.12.

For data collection, Yin (2009, p.102) listed six sources of evidence in the case study protocol: documentation, archival records, interviews, direct observation, participant observation, and physical artefacts. Not all of them need to be used in every case study (Yin, 2009). In this actual case study the four first ones will be applied. Further, documents could be letters, memoranda, agendas, study reports, or any items that could add to the data base. The validity of the documents should be carefully reviewed to avoid incorrect data being included in the database. One of the most important uses of documents is to corroborate evidence gathered from other sources. In my case, results and ideas from the observations and

the interviews need to be founded in existing documentation. The potential for over-reliance on document as evidence in case studies has however been criticised (Yin, 2009).

The process of collecting qualitative data and finally develop a systematic overview which may build conclusions related to the case, is crucial to deduct valid and well explained results from a case study. The volume of data in case studies is often large, and a "huge chasm often separates data from conclusions" (Eisenhardt, 1989b, p.539). Normally, it is not possible to follow how a researcher moves from the full number of pages to the final conclusions (Miles & Huberman, 1994). However, within-case analyses might be a tool to partly remediate this issue. In these analyses detailed write-ups are made for each site, which improves the insight of the researcher (Eisenhardt, 1989b). The interactive nature of data collection and analysis allows the research to recognise important themes, patterns and relationships as data are collected (Saunders et al, 2009). With more than one researcher involved, sharing of data based on data source has further been recommended, because this tactic improves insight and detects evidence conflicts (Eisenhardt, 1989b). However, I will conduct this case study on my own, which makes this option impossible.

When the data collection is finished, the next step in the analyses will be to collect impressions, themes and concepts before conducting an interpretative process in where findings are compared with other findings and with theory, "iterating toward a theory which closely fits with the data" (Eisenhardt, 1989b). Thomas (2011) described this process by a method which is referred to as the constant comparative method, being applied to case studies related to interpretative inquiries. The constant comparative method suggests that the data are read, analysed and discussed again and again, comparing each element, phrase, sentence or paragraph with all the other elements. The elements are further emerged into themes (Thomas, 2011). Based on Thomas (2011) and Eisenhardt (1989b) I will utilise the constant

comparative method in the analyses. This analysis is similar to explanation building as described by Yin (2009, p.143).

When the analyses are finished, the results will need to be controlled. All research results, in quantitative and qualitative analyses, should be validated. Next section reviews how to validate the studies.

3.4 Validity and reliability

The impact of a study depends on the appropriateness and rigor of the research methods. Issues such as data selection, data analysis, construct and content validity affect the results and the conclusions. In a study, the focus should thus be put on the reliability and the validity of the research methods. There are many labels which have been used to describe reliability and validity of measures in the literature. Some of the relevant methods are summarised below.

Validity of a measure refers to the question whether the instrument actually measures what it is set to measure. The instrument should be logically consistent and comprehensively cover all aspects of the concept to be studied (Field, 2009; Hair, Black, Babin & Anderson, 2010). The reliability is the “extent to which a variable or a set of variables is consistent in what it is intended to measure” (Hair et al, 2010, p.8). While validity is about what to measure, reliability is about how it is measured (Hair et al, 2010, p.93).

Three tests of validity are common in social science as described by Yin (2009, p.40):

- Construct validity, which identifies correct operational measures for the concept being studied
- Internal validity, which is seeking to establish a causal relationship (this test is not employed for descriptive or exploratory studies)
- External validity, which defines the domain to which a study can be generalized

The construct validity measures whether the content of a test corresponds to the content of the construct it was designed to cover (Field, 2009). A comprehensive literature review will be a good contribution to obtain this sort of validity. Using measures which have been previously tested will further support the content validity. Statistical tests are available to check out the construct validity.

Obtaining generally acceptable conclusions from a research project is related to the nature of research. External validity will thus be a central aspect. Methods like formal theory and sample surveys, generating information from literature review, hypotheses and model testing would allow the researchers to report more general results and increase external validity (Scandura & Williams, 2000). No research strategy is, however, able to cover all aspects of validity. Triangulation is suggested as an effective strategy to achieve more valid and reliable research results (Yin, 2009). Different strategies will maximise different kinds of validity.

An instrument which is not valid, is neither reliable while it is possible to have an instrument which is reliable, but not valid. Furthermore, validity is a necessary condition, but not a sufficient one. To be valid, the instrument will first have to be reliable (Field, 2009; Mehrens & Lehmann, 1984). In this research the literature review is used to define the variables tested by the analyses, while the external validity is aimed to be secured by the elaborated choices and priorities.

As explained above, the reliability states whether an instrument can be interpreted consistently across different situations, or if an operation of a study can be repeated with the same results (Field, 2009). However, in social science research the perfect measuring will never occur, especially when measuring abstract concepts. To test out the stability the test should ideally have been administered to the same group on two different occasions. Practically, this is usually impossible to obtain. Consequently, all reliability coefficients are estimates, and there are several types of reliability tests (Mehrens & Lehmann, 1984):

stability, equivalence, internal consistency and inter-scorer reliability. Internal reliability is the indicator of the homogeneity of questions in a test or questionnaire, or the relative degree to which the responses to individual items correlate with the total test score. The most common version of this is the Pearson product moment correlation coefficient or Cronbach's alpha (Cronbach & Meehl, 1955). Further, when testing the content, the equivalence should theoretically be measured by administering two equivalent forms of the same measurement instrument to the same group on the same day. The inter-rater reliability is focused on the personal judgment of the researchers, and is commonly used when several researchers are involved in one survey. In this study the observations in the qualitative part have been collected over time, and the internal consistency will thus be a factor when evaluating the board observations in the case study.

To secure reliability and validity of the measurements confirmatory factor analyses will be conducted, and Cronbach's alpha values will be calculated. Multi-item measurements are further the best way to create reliability (Mehrens & Lehmann, 1984). All the measures in this thesis are based on more than one item - usually between four and eight items each. The measurements are reported in section 3.10.

3.5 Testing the model - test parameters.

The following section describes the parameters applied when analysing this quantitative model. Specifically, I will discuss the various checks that are recommended.

3.5.1 Eigenvalue

In research we are trying to identify how individual clusters on to factors by calculating "the amount of variance accounted for by a factor" (Hair et al, 2010, p.92). The eigenvalue of a factor indicates the substantive importance of this factor. It is possible to obtain as many factors as there are variables, and each of them has got an eigenvalue (Field, 2009).

There will normally be some factors with a low eigenvalue and a few factors with higher eigenvalues (Field, 2009). Kaiser (1960) recommended retaining all factors with eigenvalues greater than 1. The idea was that eigenvalue represents the amount of variation explained by a factor, and with a value greater than 1, the eigenvalue explains more than the single effect of the factor itself (Kaiser, 1960). Later research reported, however, that this criterion is too strict, recommending to retain all factors with an eigenvalue greater than 0.7. For a sample with more than 250 observations even a value at 0.6 should be acceptable (Jolliffe, 2002).

Eigenvalues will be calculated and reported in chapter IV.

3.5.2 The normal distribution

The multiple regressions are built on the assumption of normally distributed variables. In fact the assumption is that the errors from the regression model are normally distributed. This will normally mean that the variables themselves should be normally distributed as well. However, analyses where the variables do not satisfy the criteria of a normal distribution, but where the errors are still normally distributed, do exist (Field, 2009).

Skewness and kurtosis are measuring the fit of the data compared with the normal distribution. While skewness measures the distribution of observations on the left vs. right side of the mean, the kurtosis measures the values of the observations compared with values from the normal distribution. Using mathematic terms, we can explain this as the skewness represents aberrations on the x-axis, while the kurtosis shows the aberrations on the y-axis, all compared with the normal distribution. By calculating a variable $z = \text{skewness/kurtosis}$ divided with their standard errors (which are the normalized values of skewness and kurtosis), a measurement of the real fit between the distribution of the variables and the normal distribution is calculated. With a two tailed significance level at five percent the corresponding coefficient from the normalized normal distribution is the absolute value of

1.96 (Field, 2009, appendix, p.800). For coefficients with values higher than 1.96, there will be a significant bias in the distribution of the variable, representing an aberration from the normal distribution. Alternatively, the Kolmogorow-Smirnov test allows checks for this normality fit. However, with a high number of observations it is very easy to get significant biased results for this test. Based on the size of the sample in this research I have thus omitted the test, but the data are tested for skewness and kurtosis.

The results will be reported in chapter IV. For small samples the stated criteria should be satisfied, for a big survey this point is not of the same importance, since all samples move towards a normal distribution when the number of observations increases (Field, 2009).

3.5.3 Multicollinearity

Multicollinearity is a state of very high inter-correlations or inter-associations among the independent variables. Multicollinearity is therefore a type of disturbance in the data, and if present in the data, the statistical inferences made about the data may not be reliable.

Multicollinearity thus exists when there is a strong correlation between two or more variables in the regression model. Perfect multicollinearity is rare, but a certain multicollinearity is however usual in most surveys. The existence of multicollinearity represents an untrustworthy regression coefficient since the standard error of them increases, and the size of R square, the measure of multiple correlations, is limited, since the variation in one variable implies a variation in the other multicollinearities variables.

Multicollinearity can therefore result in several problems (Hair et al, 2010, p.202):

- The partial regression coefficient may not be estimated precisely due to multicollinearity, since the standard errors are likely to be high
- Multicollinearity may result in a change in the signs as well as in the magnitudes of the partial regression coefficients from one sample to another sample

- Multicollinearity makes it tedious to assess the relative importance of the independent variables in explaining the variation caused by the dependent variable

As a consequence, in the presence of high multicollinearity, the confidence intervals of the coefficients tend to become very wide and the statistics tend to be very small. It thus becomes difficult to reject the null hypothesis of any study when multicollinearity is present in the data under study. Multicollinearity is checked by a scan of the correlation matrix of the variables. This correlation should not be higher than 0.8 (Field, 2009). The variance inflation factor (VIF) is a more exact measure. The VIF indicates whether a variable has a strong linear relationship with the other variables. There is, however, no hard rule about what values of VIF being acceptable, but it is suggested that the value should be lower than 10 (Hair et al, 2010. p.205).

VIF-tests will be conducted in the quantitative analysis and reported in chapter IV.

3.5.4 Cronbach's alpha

Measuring of reliability by the coefficient Cronbach's alpha is the most common test for internal consistency (scale reliability) based on Pearson's product moment correlation coefficient. Cronbach's alpha is calculated by the number of items, the variances and the covariances. Values of 0.60 to 0.70 deem the lower limit of acceptability (Hair et al, 2010, p.92). However, since the number of items is included in the definition of alpha, and since alpha is positively correlated to the number of items, a high value of alpha might be due to a high number of items on the scale (Cortina 1993; Field, 2009; Hair et al, 2010).

Cronbach's alpha will be reported together with the measurements in section 3.10. In addition, for each item, the Cronbach's alpha if the item is deleted will be included.

3.5.5 Common method bias

Common method bias occurs when the variance attributable to the measurement method is one of the primary sources of measurement error (Podsakoff, MacKenzie, Lee & Podsakoff, 2003), and has to be taken into account in the survey procedures as well as tested statistically.

First, in the Norwegian Value Creating Board Survey, some procedures were adopted to reduce potential common method biases (Huse, 2009; Lervik et al, 2005; Podsakoff et al, 2003; Sellevoll et al, 2007):

- The cover letter guaranteed anonymity and confidentiality.
- Dependent and independent variables in questionnaires were kept separate from each other.
- Careful attention was devoted to the wording of questions to avoid vague concepts and to reduce item ambiguity).
- In the questionnaire it was clearly stated that there were no right or wrong answers and that respondents should answer questions as honestly as possible.
- The questions were worded to minimize the likelihood of social desirability bias.

Further, I applied several statistical remedies in the data analysis as suggested by Podsakoff et al (2003). Harman's one factor test was used (Podsakoff et al, 2003). Since the exploratory factor analysis of the items measuring all perceptual variables, exhibited more than one factor with eigenvalues higher than 1.0, the majority of the variance between the variables cannot be accounted for by one general factor (common method variance). Finally, the partial correlation procedure suggested that common method bias does not appear to be a problem in the data (Lindell & Whitney, 2001).

3.6 Defining the model

To underpin the final model and hypotheses the elements in the model and the consequences of the moderating or mediating effects should be analysed. A moderator is a qualitative or a quantitative variable that affects the direction and or strength of the relation between an independent and a dependent variable (Baron & Kenny, 1986). Further, a given variable may be said to function as a mediator to the extent that it accounts for the relation between the independent and the dependent variable (Baron & Kenny, 1986). While moderators certify when certain effects will hold, mediators explain why and how such effects occur.

Below detailed criteria of moderators and mediators are presented.

3.6.1. Mediators or moderators?

The regression equation with the three moderating effects

The general regression equation with one independent variable and t control variables is:

$$y_i = \alpha_i x_i + \gamma_i c_1 + \gamma_2 c_2 + \dots + \gamma_t c_t$$

where y_i is the dependent variable,

x_i is the independent variable,

$c_1.. c_t$ are control variables

α_i is the regression coefficient and

γ_i is the regression coefficient of the control variables

i is defined for control, service and strategy task (respectively)

With the three moderating effects the moderators are included in the regression equation:

$$y_i = \alpha_{1i} x_i + \alpha_{2i} m_1 + \alpha_{2i} m_2 + \alpha_{2i} m_3 + \beta_{1i} x_i m_1 + \beta_{2i} x_i m_2 + \beta_{3i} x_i m_3 + \gamma_i c_1 + \gamma_2 c_2 + \dots + \gamma_8 c_8$$

where i = control, advisory, strategic

m_1 is the exploratory learning moderator

m_2 is the transformative learning moderator

m_3 is the exploitative learning moderator

and α , β and γ are the regression coefficients

which defines the moderators having a direct and an indirect impact on the dependent variables.

By a transformation we further find that

$$y_i = (\alpha_{1i} + \beta_{1i}m_1 + \beta_{2i}m_2 + \beta_{3i}m_3)x_1 + \alpha_{2i}m_1 + \alpha_{2i}m_2 + \alpha_{2i}m_3 + \gamma_1c_1 + \gamma_2c_2 + \dots + \gamma_8c_8,$$

$(\alpha_{1i} + \beta_{1i}m_1 + \beta_{2i}m_2 + \beta_{3i}m_3)$ defines the total regression coefficient of x_1 on y_i ,

where α is the direct regression coefficient and $\beta_{ji}m_j$ is the moderating regression coefficient for $j = 1..3$

By calculating the expressions $z_j = m_j x_1$ for $j = 1..3$, the equation can be written as:

$$y_i = \alpha_{1i} x_1 + \alpha_{2i}m_1 + \alpha_{2i}m_2 + \alpha_{2i}m_3 + \beta_{1i}z_1 + \beta_{2i}z_2 + \beta_{3i}z_3 + \gamma_1c_1 + \gamma_2c_2 + \dots + \gamma_8c_8$$

This equation is similar to the general regression equation, and the values are defined in the same way. The coefficients can thus be calculated by a normal multiple regression analysis. SEM analysis can be used as well, but the results will be the same as if the analysis is conducted by multiple regressions in SPSS.

When a mediating effect is analysed, we have not got any similar way of writing expressions. The consequence is that mediation cannot be measured exactly, but the tendency of mediation can be tested.

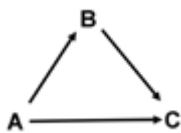
A mediation model is a causal model. In other words, it means that the mediator variable has been assumed to cause the effect in the dependent variable and not vice versa. As reported above, the mediation caused by the mediator variable cannot be defined statistically. On the contrary, statistics can be utilised to assess an assumed meditational model developed by the mediator variable (Baron & Kenny, 1986). The mediator variable explains the relationship between the dependent variable and the independent variable. When complete mediation appears the independent variable no longer affects the dependent variable. The process of partial mediation by the mediator variable is defined as a reduced, but still existing effect of the independent variable when the mediator variable is included in the model.

3.6.2 The model

The causal model was defined in section 2.8. The research question for the quantitative study is related to the impact of absorptive capacity on board task performance, and mediation will be tested. Several other models were considered before this model was derived. Originally, I found several options of suitable models for testing a possible connection between these variables:

- Testing the direct impact of absorptive capacity on board task performance
- Testing the impact of absorptive capacity on board task performance with presence of knowledge and skills as a moderator or a mediator
- Testing the impact of presence of knowledge and skills on board task performance with absorptive capacity as a moderator or a mediator

While a moderation analysis is an exercise of external validity in that the question is how universal is the causal effect between the antecedent and the consequences, a mediation test analyses how (and by what means) an effect occurs. What accounts for the impact of the antecedents (A) on the consequences (C)? It is hypothesized that A "causes" B and that B then "causes" C. (Holmstrom, 2006).



Four conditions must be met for B to be a mediator:

- 1) A is significantly associated with C
- 2) A is significantly associated with B
- 3) B is significantly associated with C (after controlling for A)
- 4) The impact of A on C is significantly less after controlling for B (Baron & Kenny, 1986; Kenny, 2012)

Deciding which variables are the moderators or the mediators, will depend on the focus of the research. In this context analysing absorptive capacity as mediator on the connection between presence of knowledge and skills and board task performance will examine how absorptive capacity strengthens or weakens the impact of the knowledge variable on board task performance. The opposite opportunity will be analysing presence of knowledge and skills as mediator on the impact of absorptive capacity on board task performance, explaining whether, how, and to which degree, the presence of knowledge and skills has an impact on the relationship between absorptive capacity and board task performance.

I will base the model on the former defined relationship between presence of knowledge and skills and board task performance (Forbes & Milliken, 1999; Machold et al, 2011; Huse, 2007; Minichilli et al, 2009). Then the new contribution will be the analysis of whether, and if so, how and to which degree, absorptive capacity has an impact on board task performance as a mediator. I will thus test the mediated effect of presence of knowledge and skills on board task performance with absorptive capacity (exploratory learning, transformative learning and exploitative learning) as the mediator.

The model will be tested by the methods and analyses presented in this chapter and by structural equation modelling which are reviewed in the next section.

3.7 Structural equation modelling (SEM)

Structural equation modelling (SEM) is a tool for hypotheses testing and deducting relationships among observed and latent variables. As a technique it allows for additional insight beyond what is possible by regressions. While multiple regressions can just examine a single relationship at a time, SEM can examine a series of dependence relationships simultaneously (Hair et al, 2010). Most research is analysing interrelated questions. SEM represents a stronger and more appropriate tool for such analyses.

Structural equation modelling is thus a more detailed method for calculation of statistical connections, variables and dependence. Compared with the traditional regression models, SEM develops a more complex and complete calculation of the full model. Analyses based on SEM might thus more easily be further developed and strengthened by recalculations of the initial model since the output file includes information of strengths and weaknesses in the model, as well as improvable potentials. Structural equation modelling typically tests how well the observed data fit a restricted structure, by imposing the structure of the hypothesized model on the sample data (Byrne, 2001). Fitting a model to data is the same as solving a set of equations.

3.7.1 Variables in SEM

It is useful to distinguish terminologies of different types of variables used in structural equation modelling, namely latent variables versus observed variables; and exogenous versus endogenous variables (Byrne, 1988).

Latent variables are those variables that cannot be observed and measured directly. A latent variable is linked to variables which are observable, and thereby making its measurement possible. These measured scores are termed observed variables, and serve as indicators of the latent variable which they are presumed to represent in structural equation.

Exogenous variables are synonymous with independent variables. They cause fluctuations in the values of other variables in the model. Endogenous latent variables are synonymous with dependent variables, and are thus influenced by the exogenous variables in the model, either directly or indirectly. Changes in the values of exogenous variables are not explained by the model, while fluctuations in the values of endogenous variables should be explained by the model because all variables that influence them principally are included in the model specification (Hair et al, 2010, p.637).

Structural equation modelling can usually be separated into a measurement model and a structural model. The measurement models address the reliability and validity of the indicators in measuring the latent variables, while the structural model specifies the direct and indirect relations among the latent variables and describes the amount of explained and unexplained variance in the model (Byrne, 2001, p.3).

In SEM a two-step modelling approach is recommended, emphasizing the analyses of two conceptually distinct latent variable models: measurement and structural. The testing of the structural model, which is originally the testing of the initially specified theory, may be meaningless unless it is first established that the measurement model is correct (Joreskog, 1993). If the chosen measurement variables are biased or wrong, the specified theory must be modified before testing. Therefore, the measurement model should be tested before the structural relationships are tested.

This study follows this advice. Before testing the structural models, which is reported in Chapter IV, the measurement model for each construct is tested and reported in section 3.10 in this chapter. The convergent and discriminant validity of measurement constructs are thus established before moving on to the analysis of the structural model.

3.7.2 Testing by structural equation modelling

There are three generic strategies for testing structural equation models (Joreskog, 1993); strictly confirmatory, alternative models, and model generating. When applying the strictly confirmatory strategy, we postulate a single model based on the theory, collect appropriate data, and then test the fit of the hypothesized model to the sample data. From the results of this test, we either reject or fail to reject the model; no further modification to the model is made (Joreskog, 1993).

Under the alternative models strategy, several alternative models from the theory are proposed. Following analysis of a single set of empirical data, the model being most appropriate in representing the sample data is selected.

Further, there will be three different degrees of model identification in structural equation modelling: just-identified, over identified, or under identified (Byrne, 2001, p.35):

- A just-identified model is one in which there is a one-to-one correspondence between the data and the structural parameters, which means that the number of data variances and covariances equals the number of parameters to be estimated.
- In an under identified model the number of parameters to be estimated exceeds the number of variances and covariances. Thereby, the model does not contain sufficient data for the purpose of attaining a determinate solution of parameter estimation.
- An over identified model is a model where the number of estimate parameters is less than the number of data points (variances, covariances of the observed variables). The result will be positive degrees of freedom that allow for rejection of the model. When testing the hypotheses, this research applies the method of an over identified model.

As discussed above, in statistical analyses we usually assume that the sample data follow a multivariate normal distribution. This implies that the means and covariance matrix contain all the information. The basic model is $DATA = MODEL + ERROR$. The aim of the SEM-analyses is an estimation of model parameters that can be well fitting representatives of the corresponding population values. The method most widely used for estimation is Maximum Likelihood estimation, which assumes multivariate normal data and a reasonable sample size, normally with a minimum of 100 - 500 cases. The exact number will depend on the number of constructs in the equation system. Further, the less number of items of measurements, the more demand for a higher number of cases (Hair et al, 2010, p.662). Altogether, the main assumptions about Maximum Likelihood estimation are:

1. The sample is large
2. The distribution of the observed variables is multivariate normal
3. The hypothesised model is valid
4. The scale of the observed variables is continuous (Byrne, 2001)

In this research, Maximum Likelihood estimation method is used in the SEM analysis. The scale of the observed variables is continuous (5-point Likert-type scale). In addition, the hypothesised model was developed from systematic review of theories and extant research findings. Therefore, the data used in this study meets the above criteria 1, 3 and 4. Regarding the requirement of normal distribution of observed variables, Micceri (1989) points out that true normality is exceedingly rare in education and psychology. West, Finch and Curran (1995) further suggest that normality should be examined univariately and multivariately. Still, most of the variables in the study satisfy a normal distribution. In this research project all the four assumptions listed above are thus satisfied.

3.7.3 Structural equation modelling - critique

As explained, structural equation modelling contains various powerful analysis techniques, and has a positive impact on research in the applied fields. However, some issues have been raised against the use of structural equation modelling (Hair et al, 2010). One of the issues is the importance of statistical assumptions of normally distributed data and sample sizes to obtain confidence in results. The restrictions of sample size can have significant impact on the outcomes of structural equation modelling. Another issue is related to the causal interpretation in structural equation modelling. Even if we find correlations, it does not necessarily mean there is a causal relationship, or if this model is the most correct in describing a relationship (Cliff 1983). Further SEM has got a limitation for samples with missing data. While SPSS opens for a pairwise or list wise deletion of missing values, SEM has a predefined condition

that missing values will have to be calculated by the mean of the existing observations. This issue has to be handled in cases when SEM is applied for samples with a high amount of missing values. In this study missing values are limited and do not represent an issue. However, to meet these issues, regression analyses will be conducted in combination with SEM. Such a combination of the two analyses should contribute to a more solid confirmation of the results.

3.7.4 Testing SEM results

In SEM there are several tests which should be conducted to assure the reliability and validity of the measurements. There are three groups of fit tests in SEM. First, absolute fit indices measure how well the specified model fits the data. These fit indices include chi-square tests, goodness of fit index (GFI), root mean square error of approximation (RMSEA) and root mean square residual (RMR). Further, other fit indices are testing how well the estimated model fits relative to some alternative model (incremental fit indices), or which model among a set of competing models is best (parsimony fit indices) (Hair et al, 2010, p.666-669).

Incremental fit indices are commonly compared with a null model, where all variables are uncorrelated. Fit improvements can be obtained by specifying related multi-item concepts (Hair et al, 2010, p.668). For parsimony fit the models are compared relative to the complexity. Improvements are possible by better fit or simpler models (Hair et al, 2010, p.669).

Details of tests within the groups are reported together with the results in section 4.2.5 (factor analyses) and 4.3.2.

3.8. Conclusions to research methodology

The methodological aspects presented in this part of the thesis are the basic underlying theoretical dimensions related to methods used in empirical studies. The results presented in

chapter IV will be based on these methods. The choice of a multiple method (Saunders et al, 2009) is founded on the nature of the research question to be examined. The full concept of absorptive capacity may be considered differently, in different contexts and by different actors in boards, which supports an element of qualitative research in the thesis. On the other hand a systematic quantitative analysis based on questionnaires, will represent a meaningful contribution, especially at this early stage of the research on the topic. As argued in section 3.1 and in chapter II, my conclusion is thus that a combination of both methods will develop a more holistic picture. In the following sections the research methods in this study will be reviewed.

3.9 Research methods - contextual information

As reviewed in chapter II and described in the conceptual model, the hypotheses in this thesis are partly based on research of corporate governance and boards, partly on research on absorptive capacity. The data from the Norwegian Value Creating Board Survey will be applied in the quantitative analyses, and the measurements of mediators, dependent and independent variables will be based on former empirical research in respectively the board research and the absorptive capacity field. This part of the research methods chapter presents the contextual information which is related to the studies. Norwegian boards and The Norwegian Value Creating board Survey are reviewed followed by definition of measurements in the quantitative study.

3.9.1 About Norwegian boards

The data in this study are collected in Norway. Since board regulations vary between countries, I will review main characters of Norwegian boards.

Limited liability companies in Norway are mandated by law to have a formal board of directors. The number of board members should be three or more, and the CEO is not allowed

to be the board chairperson (CEO duality). The board members are expected to delegate the daily operations of the firm to a CEO. However, firms with a share capital less than three million NOK do not need to have more than one board member, CEO duality is then allowed, and delegation is not compulsory. This will often be the case in the very small firms even if they are registered as limited liabilities companies. In firms with more than thirty employees two thirds of the employees are allowed to claim that the employees are represented by at least one board member. In firms with more than fifty employees one half of the employees can demand that one third of the board member, or at least two persons, are elected by and among the employees. In boards with employee representation board instructions and CEO work descriptions are required (Haalien & Huse, 2005; Lervik et al, 2005).

Firms with more than two hundred employees are generally supposed to have a corporate assembly. The main argument for a corporate assembly is codetermination. Employees and shareholders are electing representatives to the corporate assembly. The main tasks of the corporate assembly are to select board members and to discuss decisions being of major or long term importance for the firm. It is possible to get exception from having a corporate assembly. However, there will then be a requirement having more employee elected board members or observers at the board meetings (Haalien & Huse, 2005; Lervik et al, 2005).

In Norway a new law about gender representation on corporate board has been in operation from 2005 (only for publicly traded firms). This law requires at least forty per cent of the board members to be of the least represented sex. Similar laws or rules exist for state owned enterprises (Haalien & Huse, 2005, Lervik et al, 2005).

Finally, Norwegian board directors are active. The average number of board meetings a year was in 2003 6.2 with an average length of meetings of 3.5 hours (Haalien & Huse, 2005).

3.9.2 The Value Creating Board Survey

The research program “The Norwegian Value-Creating Board Survey” was conducted at the Norwegian School of Management BI from 2003 to 2007. Two major surveys were conducted in 2003/2004. While most of the former research on boards was based on large US companies, this survey has its focus on boards in firms with various sizes, including small and medium sized firms (SME's) and family firms.

This study employs data from one of the two surveys – the innovation survey. The aim of this survey was to investigate the impact of board performance on the value creation of Norwegian companies. The questionnaire from the survey is presented in appendix V (translated to English by me) and in appendix VI (in original with Norwegian text).

The sample captures the diversity of firms in Norway with regard to both firm size and ownership structure. The innovation survey was sent to the three main samples:

- the largest Norwegian firms (762 large firms),
- a sample of firms with 30-50 employees (427 firms),
- a sample of firms with 10-30 employees (541 firms).

The CEO's were the respondents of the questionnaires. The questionnaire contained about 200 questions. During the fall 2003, 249 responses with completed questionnaires were received from CEO's in the largest firms, 115 responses in the mid-size group, and 124 responses from CEO's in the group with the smallest firms. The gross response rates were thus 33%, 27% and 23% for the three groups respectively.

In Norway various corporate forms exist. Firms having various corporate forms are included in the sample. There are some state enterprises, some foundations and some cooperatives among the firms. These will generally not be family firms. However, there are also two types of joint stock companies. One of the types is the firms that are publicly traded. There are

about 600 Norwegian firms being publicly traded (called ASA-firms), and about one third of them are listed on Oslo Stock Exchange.

The public limited companies are generally larger than the limited liability firms not being traded publicly. Most public limited companies have more than 200 employees, but, there are also firms not being publicly traded (limited liability firms) with more than 200 employees.

The large limited liability firms are typically family firms, subsidiaries or state owned firms.

The ownership of the companies in the survey is described in the table below:

Table 6: Ownership of the companies in the sample

Publicly traded firms	More than 50 % publicly owned companies	Between 10 and 50 publicly owned companies	Family owned companies	Other limited liability companies	Other companies	Number of companies
47	31	10	183	191	26	488

Regarding the ownership structure of board members it was found that about 60% of the executives in the firms listed on the stock exchange owned shares in the firm, in the publicly owned firms the number was about 35%, while 78% of the family firms had their owners as executives. The board members represented the owners in 72% of the listed firms. The CEO was a board member in 9 % of the listed firms, in 66% of the family firms and in 56% of the other ones (Lervik et al, 2005).

The questionnaire was tested by a pilot study in 2001. In total about 200 questions were included. The results are based on the 6-8 pages questionnaires related to the value creating of boards. The survey covered the following items:

- a. Firm demography and industry
- b. Age, gender, tenure, experience and background of the CEO and chairperson (and respondent)

- c. Ownership structure
- d. The board members and board composition
- e. Board working structures and board leadership
- f. Board decision-making culture
- g. Board task involvement
- h. Innovation and value creation

Most of the questions/statements included in the survey questionnaires were Likert-type questions. The respondents were asked to rate from a scale as to how much they disagreed or agreed with presented assertions. The scales used in the questionnaires were from 1 to 5, where 1 was strongly disagreeing and 5 was strongly agree. The reported values are means.

The survey has during the recent years been the source of several studies and articles (Minichilli et al, 2012; Machold et al, 2011; Tacheva & Huse, 2006). Similar studies have been conducted in other European countries from 2004 and later (The Netherlands, Belgium, Italy, Germany, Turkey and Finland) (Huse, 2007; Huse, 2009; Sellevoll, Huse & Hansen, 2007; van Ees et al, 2008; Zattoni et al, 2011). Based on the Norwegian Value Creating Board Survey, measurements of the variable in the model will be derived in the next section.

3.10 Measurements

The importance of measurement constructs in achieving the overall validity and reliability of research findings has been addressed by many authors (Hair et al, 2010). Ideally, the best fitting measurements based on the literature review should have been developed, transferred to items on a questionnaire, followed by data collection and analyses. As explained earlier, this quantitative analysis is based on existing data from the Norwegian Value Creating Board Survey (Haalien & Huse, 2005; Lervik et al, 2005). When my research project was initiated, I thoroughly considered whether the existing data were appropriate for the thesis or if a

separate data collection was to be initiated and conducted. This issue was discussed in chapter

3.2. In addition, the following three reasons were important when selecting the survey:

1. The data represent the same research area and are based on the same theoretical framework
2. The response rate is satisfactory, while another project in UK at that time turned out with a really low response rate. The possibility of reduced quality in data in a survey was thus a reality. Farquhar (2010) reported a response rate of 4.64
3. Surveys similar to the Norwegian Value Creating Board Survey have been conducted in several other European countries. By choosing these data for the absorptive capacity analyses, similar research projects can be implemented in these countries as a follow up

Efforts are made in this thesis to maximise the validity and reliability of measurements scales from the following angles:

- Multi-items are used to construct each of the measurement scales
- The operationalization of each measurement scale is checked against the relevant content domain for the construct

While the antecedent and the consequences are variables which are covered by measurements from former research (Huse, 2007; Machold et al, 2011; Minichillii et al, 2012; van Ees et al, 2008), the measurements of absorptive capacity in a board context have to be derived. When measuring absorptive capacity in a board context I will thus analyse and investigate measurements of the same concept in a firm context, which were originally leaning on learning theories from psychological research.

All measurement scales will be subjected to confirmatory factor analysis, and the Cronbach's alpha values will be calculated. Furthermore, the skewness and kurtosis will be reported in

section 4.2.2 when the descriptives have been calculated. The variables in the research model are built up by the following items.

3.10.1 The dependent variables

The dependent variables in this analysis will be three board tasks, control, service and strategy. With an existing research tradition in enhancing these variables in research on board performance, well-constructed measures have been developed. Measurements similar to existing scales will thus be used (Huse, 2007; Machold et al, 2011; Minichillii et al, 2012; van Ees et al, 2008). The measurements are shown in the table below. The Cronbach's alphas are all higher than 0.7 and the factor loadings from exploratory factor analysis are satisfactory, spanning from 0.49 to 0.78.

Table 7: Measurements – dependent variables

Dependent variables		Item	Factor loading	Cronbach 's alpha	Cronbach's alpha if item deleted
Control	Y1	Involved in follow up of cost budgets	0.59	0.839	0.822
	Y2	Involved in follow up of sales budgets	0.57		0.822
	Y3	Involved in follow up of firm liquidity	0.53		0.828
	Y4	Involved in follow up of investments	0.58		0.823
	Y5	Involved in follow up of CEO performance	0.53		0.830
	Y6	Involved in follow up of product quality	0.63		0.821
	Y7	Involved in follow up of human resources	0.67		0.817
	Y8	Involved in follow up of HMS (Health, Environment and Safety)	0.73		0.810
	Y9	Involved in follow up of natural environment and pollution issues	0.62		0.825
Service	Y10	Advice in general management questions	0.69	0.729	0.656
	Y11	Advice in legal questions	0.50		0.713
	Y12	Advice in financial questions	0.65		0.660
	Y13	Advice in technical questions	0.51		0.708
	Y14	Advice in market questions	0.63		0.673
Strategy	Y15	Board formulates strategy proposals	0.53	0.736	0.682
	Y16	Board ratifies long term strategies decisions	0.78		0.660
	Y17	Board implements strategy decisions	0.49		0.697
	Y18	Board controls and evaluates strategy decisions	0.76		0.666

3.10.2 The independent variable

Presence of knowledge and skills was defined as an antecedent in the article by Forbes and Milliken in 1999, and Huse includes presence of knowledge and skills in the concept "the decision-making culture" in his framework (Huse, 2005, 2007). Recently, this antecedent has been included in several analyses within the subject of board task performance (Machold et al, 2011; Minichilli et al, 2009). Presence of knowledge and skills is traditionally defined as a combination of general knowledge and firm specific knowledge (Zahra & Filatochev, 2004; Schmidt, 2010). In the following analysis this variable includes six items as listed in the table below. The Cronbach's alpha is 0.826 with factor loadings from 0.55 to 0.81.

Table 8: Measurements – the independent variable

Independent variable		Item	Factor loading	Cronbach's alpha	Cronbach's alpha if item deleted
Presence of knowledge and skills	X19	Knowledge of main activities	0.70	0.826	0.797
	X20	Knowledge of critical technology and critical competency	0.81		0.778
	X21	Knowledge of weak points in the firms	0.69		0.795
	X22	Knowledge of critical technology	0.73		0.784
	X23	Knowledge of HMS (Health, Environment and Safety)	0.55		0.819
	X24	Knowledge of customers' needs	0.55		0.814

3.10.3 Absorptive capacity

The research related to absorptive capacity has as explained been mainly associated to firm activities. Measurements for absorptive capacity in boards will thus have to be developed. The selected items are based on earlier empirical research in a firm context (Szulanski, 1996; Szulanski et al, 2004; Jansen et al, 2005; Cadiz et al, 2009; Lichtenthaler, 2009; Flatten et al, 2011b). A full overview of measurements applied in a firm context is reported in Appendix I.

As reviewed and explained in chapter II, in this study absorptive capacity will be defined by three dimensions - exploratory learning, transformative learning and exploitative learning (Lane et al, 2006; Lichtenthaler, 2009). The measurements are derived below. For each dimension the measurements and the references in former research are listed in tables.

3.10.3.1 Exploratory learning

The board members will play a role in collecting and presenting external knowledge and information as described in the studies. Based on this fact, the exploratory learning variable should be related to similar variables in a firm context.

With a fast information flow between board members the exploratory effect will increase. This flow will entail exchange and development of new and unknown knowledge. The second and third items secure that board members individually are checking out and collecting new knowledge which is later made available to the board. The two last items are more distant, but is associated to the same principal thinking as the former ones. Empirical research has shown that the networks of board members are highly appreciated when recruiting board members (Sellevoll et al, 2007). The impact of networks and lobbying should thus be a significant item when measuring absorptive capacity in a board context.

Table 9: Exploratory learning - measurements

Absorptive capacity	No	Item	Article	Similar items
Exploratory learning	1.	<i>Fast information flow between board members</i>	Cadiz et al (2009)	4. The shared knowledge within my team makes it easy to understand new material presented within our technical areas. 5. It is easy to see the connections among the pieces of knowledge held jointly within our team.
			Jansen et al (2005)	4. Other divisions of our company are hardly visited. (reverse-coded).
			Flatten et al (2011b)	6. In our company there is a quick information flow, e.g. if a business unit obtains important information it communicates this information promptly to all other business units or departments
	2.	<i>Board members explore information before meetings. Board actively seeks own information in addition to management reports.</i>	Jansen et al (2005)	3. We collect industry information through informal means (e.g. lunch with industry friends, talks with trade partners). 5. Our unit periodically organizes special meetings with customers or third parties to acquire new knowledge.
	3.		Cadiz et al (2009)	1. People in my team are able to decipher the knowledge that will be most valuable to us. 2. It is easy to decide what information will be most useful in meeting our customers' needs. 3. We know enough about the technology we use to determine what new information is credible and trustworthy.

			Lichtenthaler (2009)	<p>1. We frequently scan the environment for new technologies. We thoroughly collect industry information</p> <p>6. We frequently acquire technologies from external sources.</p> <p>7. We periodically organize special meetings with external partners to acquire new technologies.</p>
	4.	<i>Board members are familiar with employees' view on HMS</i>	Flatten et al (2011b)	<p>4. In our company ideas and concepts are communicated cross-departmental.</p> <p>5 Our management emphasizes cross-departmental support to solve problems.</p>
	5.	<i>Board members are familiar with employees' view on collaboration between management and union</i>	Cadiz et al (2009)	<p>4. The shared knowledge within my team makes it easy to understand new material presented within our technical areas.</p>
	6.	<i>Building networks</i>	Flatten et al (2011b)	<p>2. Our management motivates the employees to use information sources within our industry.</p> <p>3. Our management expects that the employees deal with information beyond our industry</p>
	7.	<i>Lobbying and legitimation</i>	Flatten et al (2011b)	<p>2. Our management motivates the employees to use information sources within our industry</p>
			Jansen et al (2005)	<p>1. Our unit has frequent interactions with corporate headquarters to acquire new knowledge.</p>

The Cronbach's alpha and factor loadings are reported in the table below:

Table 10: Exploratory learning – test results of measurements

Absorptive capacity		Item	Factor loading	Cronbach's alpha	Cronbach's alpha if item deleted
Exploratory learning	X1	Fast information flow between board members	0.45	0.722	0.716
	X2	Board members explore information before meetings	0.75		0.674
	X3	Board actively seeks own information in addition to management reports	0.46		0.701
	X4	Board members are familiar with employees' view on HMS	0.58		0.658
	X5	Board members are familiar with employees' view on collaboration between management and union	0.48		0.699
	X6	Building networks	0.46		0.682
	X7	Lobbying and legitimation	0.35		0.694

The factor loading of item 7 – Lobbying and legitimation is low (0.35), but removing this item will reduce the Cronbach's alpha significantly, and the value is still higher than the lowest recommended one (Field, 2009).

3.10.3.2 Transformative learning

For transformative learning the following items have been derived based on former research in a firm context:

Table 11: Measurements – transformative learning

Absorptive capacity	No	Item	Article	Similar items
Transformative learning	8.	<i>Board members are familiar with each other's competence</i>	Cadiz et al (2009)	1 .It is easy to see the connections among the pieces of knowledge held jointly within our team.
			Szulanski (1996); Szulanski, et al (2004)	8. It is well known who can best exploit new information about the [practice] within [recipient];
	9.	<i>Good match in work division with the knowledge and skills of board members</i>	Lichtenthaler (2009)	12. We communicate relevant knowledge across the units of our firm. 13. Knowledge management is functioning well in our company.
	10.	<i>Board members fully use knowledge and skills</i>	Flatten et al (2011b)	8. Our employees have the ability to structure and to use collected knowledge. 9. Our employees are used to absorb new knowledge as well as to prepare it for further purposes and to make it available.
	11.	<i>Board members give sufficient priority to the board tasks</i>	Jansen et al (2005)	11. Employees' record and store newly acquired knowledge for future reference. 12. Our unit quickly recognises the usefulness of new external knowledge to existing knowledge
	12.	<i>Board members available if needed</i>	Lichtenthaler (2009)	12. We communicate relevant knowledge across the units of our firm
	13.	<i>All board members are active during the meetings</i>	Jansen et al (2005)	13. Employees hardly share practical experiences. (reverse coded)

These items are mainly about availability and utilisation of knowledge and the activity of board members related to knowledge presentation and sharing. Furthermore, the importance of familiarity of the knowledge distribution among the board members is specified.

All the items listed above are describing the flow of knowledge and information in the actual group, and the need for sharing knowledge, securing a real and solid information flow is underlined. Some of the items presented from the firm context are more detailed than the ones included in transformative learning in this study. In a firm, however, the meeting frequency of actors will be higher and the exchange and transformation of knowledge and skills will thus normally be executed quicker, easier and more detailed.

The Cronbach's alphas and factor loadings are reported in the table below:

Table 12: Transformative learning – test results of measurements

Absorptive capacity		Item	Factor loading	Cronbach's alpha	Cronbach's alpha if item deleted
Transformative learning	X8	Board members are familiar with each other competence	0.55	0.837	0.825
	X9	Good match in work division with the knowledge and skills of board members	0.57		0.831
	X10	Board members fully use knowledge and skills	0.81		0.788
	X11	Board members give sufficient priority to the board tasks	0.83		0.785
	X12	Board members available if needed	0.68		0.817
	X13	All board members are active during the meetings	0.69		0.810

The Cronbach's alpha is 0.837 and the factor loadings vary from 0.55 to 0.83.

3.10.3.3 Exploitative learning

Items to measure exploitative learning are presented and explained below:

Table 13: Measurements - exploitative learning

Exploitative learning	14.	<i>Being the first company in the industry to introduce new products to the market</i>	Jansen et al (2005)	20. Our unit has difficulty implementing new products and services. (reverse-coded)
			Lichtenthaler (2009)	21. Our employees are capable of sharing their expertise to develop new products.
	15.	<i>Being the first company in the industry to develop and introduce radically new technologies</i>	Cadiz et al (2009)	7. It is easy to adapt our work to make use of the new technical knowledge made available to us. 8. New technical knowledge can be quickly applied to our work.
			Lichtenthaler (2009)	18. We are proficient in transforming technological knowledge into new products. 19. We regularly match new technologies with ideas for new products.
	16.	<i>Being the first company in the industry to develop innovative management systems</i>	Flatten et al (2011b)	14. Our company has the ability to work more effective by adopting new technologies.
	17.	<i>Changing the organisational structure in significant ways to promote innovation</i>	Flatten et al (2011b)	13. Our company regularly reconsiders technologies and adapts them accordant to new knowledge.
	18.	<i>Entering new foreign markets</i>	Lichtenthaler (2009)	22. We regularly apply technologies in new products. 24. We easily implement technologies in new products.
			Jansen et al (2005)	20. Our unit has difficulty implementing new products and services. (reverse-coded)

The difference between transformative learning and exploitative learning might be marginal and hard to define (Zahra & George, 2002; Todorova & Durisin, 2007). This issue is described in details by Todorova and Durisin (2007), who propose that there is no direct process from the time when knowledge is transformed until the same knowledge is exploited, and a real description is rather a process where the transformative learning and the exploratory learning might "circle" for a while until the knowledge eventually is exploited (Todorova & Durisin, 2007), also coined as feedback loops (Volberda et al, 2010). However, all the authors define the exploitative variable by items related to application of expertise, technologies and the way this knowledge is utilised for innovative actions - without covering innovation itself. In these measurements I have followed this practice.

Generally, the items are matching well, especially with the items described by Lichtenthaler (2009) and Flatten et al (2011b) in a firm context.

The testing of these measurements is reported below:

Table 14: Exploitative learning – test results of measurements

Absorptive capacity		Item	Factor loading	Cronbach's alpha	Cronbach's alpha if item deleted
Exploitative learning	X14	Being the first company in the industry to introduce new products to the market	0.63	0.717	0.652
	X15	Being the first company in the industry to develop and introduce radically new technologies	0.66		0.634
	X16	Being the first company in the industry to develop innovative management systems	0.58		0.677
	X17	Changing the organisational structure in significant ways to promote innovation	0.62		0.668
	X18	Entering new foreign markets	0.46		0.715

The Cronbach's alpha is 0.717, and the factor loadings are from 0.46 to 0.66.

3.10.3.4 Absorptive capacity and computing dimensions

Exploratory learning, transformative learning and exploitative learning are adding up to the description of the absorptive capacity process. By calculating one value for absorptive capacity as the mean of these three variables, the reliability goes down (Cronbach's alpha 0.6). Multicollinearity could be expected, caused by the inclusion of a variable which is computed from other variables in the data set (Hair et al, 2010). This value is, however, acceptable, since even values of Cronbach's alpha smaller than 0.7 might be acceptable when dealing with a comprehensive diversity of the constructs being measured (Kline, 1999). A possible complementarity between the three learning processes will however, argue for a detailed analysis. Further, multicollinearity should be avoided when possible. I thus consider the split to be the best option for the further analyses, since we are seeking for detailed information of the concept and the complementarities between the learning processes. The main focus will thus be on these three underlying variables.

3.11 Control variables

To avoid biased results the model will be tested for control variables. Control variables are variables which are not included in the conceptual model, but which might influence the values of the dependent variables. In a regression model there should be no variables correlating with any of the variables in the model which are not included in the regressions (Field, 2009). In the quantitative analysis relevant variables which are expected to be correlated with one or more of the dependent variables are tested in the multiple regressions. The selection of control variables mainly follow previous research on presence and use of knowledge and skills and board task performance (Machold et al, 2011; Minichilli et al, 2012; Zattoni et al, 2012).

Firm and board characteristics should be tested as control variables. At the firm level, I will control for firm size measured as the logarithmic transformation of firm sales. Firm size is among the standard external controls (Huse, 2000; Machold et al, 2011; Minichilli et al, 2009; Zattoni et al, 2012).

Further, the impact of industry characteristics by using a dummy variable (1 = high-tech firm) will be tested (Carpenter, Pollock, & Leary, 2003). With respect to CEO characteristics I will control for CEO ownership (Gabrielsson & Winlund, 2000; Zahra et al, 2000) and CEO duality (Finkelstein & Mooney, 2003). The variable CEO duality will be coded 1 if the CEO was also the chairperson of the board, and 0 otherwise (Finkelstein & D'Aveni, 1994).

For board characteristics a control for the “usual suspects” will be conducted, including the number of board members (board size), the inside/outside ratio and the board members’ and the chair’s shareholding (Finkelstein & Mooney, 2003). Shareholding will be tested and measured as the ratio of board members’/chair’s shareholding to total shareholding, (Zahra et al, 2000).

Due to the Norwegian origin of the sample, I will control for the number of board members elected by employees as suggested in earlier research (Zattoni et al, 2012). This variable will be measured as the percentage of employee elected board members over the total number of directors.

Results of testing the control variables will be reported in chapter IV. The next sections will review the methods employed in the case study.

3.12 The case (Healthy)

As explained in chapter II and in earlier sections in this chapter, a combined study will be conducted, based on a survey and on a case study. Below facts and methods related to the case study are explained and discussed.

3.12.1 Healthy – background and information

Healthy was selected as a case study for several reasons. First, this is a large, complex company, which is also an important supplier of health services to a high number of people (2.6 million Norwegians). Second, Healthy is a knowledge based organisation with highly educated employees, both in the medical staff and in executive management. In such organisations the use of knowledge and skills will typically be important. In this way Healthy fits well in with the research questions in this thesis. Third, Healthy had experienced performance problems for a while when the observations started. These observations of a company in a challenging situation were thus not based on a sudden crisis, which might disappear as quickly as it arrived. Conversely, the case was related to a company with issues over time which had an impact on the whole organisation, making the organisation an interesting case related to use of knowledge and skills. Fourth, the company has a well-developed system for publishing information and documents, which makes a triangulation of the observations easier and better. Fifth, I was allowed to follow the board meetings and make the interviews, which might be an issue in some companies.

Healthy is one out of four Norwegian regional health companies. These companies are publicly owned, but their organisation model is similar to that of private companies. Healthy is provided with a twofold responsibility: 1) Own and operate hospitals as efficiently as possible and 2) ensure people in the region have adequate supply of specialist care services (either through own hospitals, private hospitals or hospitals in other regions). In Norway the responsibility for health is shared between the regional health companies and the municipalities. While the municipalities are responsible of primary care and long-term care, Healthy and the other health companies care for secondary (specialist) care and psychiatry.

Healthy was founded in 2007 by a merger of two former, smaller regional health companies, while the regional health companies as an institution were founded in 2002. In 2012 69,000

employees were working in the company and the budget was NOK 52 billion (about £6 billion). Healthy has the responsibility of the health services for 2.6 million Norwegians (56 per cent of the total population), covering 10 counties. The services are delivered in 10 different trust hospitals as well as 5 private non-commercial ones.

3.12.2 The governance structure and the board in Healthy

Healthy has a main board which is responsible for the whole company. Totally, there are 10 local health companies. They have all got separate local boards. All the local boards, but two, have 11 board directors, where 4 of them are elected by and among the employees. The largest health company has a board of 12 directors, and 5 of them are employee elected. The smallest company, representing the pharmacies in the hospitals, has 8 directors, and 3 of them are elected by and among the employees. The directors of the local boards, who are not employee elected, either work in Healthy or have a background from political activities (since 2005).

Further, Healthy has a corporate assembly, having 2 meetings a year. The directors of the main board are elected by the corporate assembly. Furthermore, the board members in Healthy are to

“ensure that patients' and relatives' rights and interests are safeguarded, among other through a regular cooperation with their organisations. The board is also to ensure that the experiences, needs' assessments, priorities and views collected from patients and their families and organisations, are given a central role in planning and running of the enterprises” (Healthy's Statutes, § 14).

The members of the local boards are nominated by the main board based on a proposal from the nomination committee.

Furthermore, the directors who are not elected by employees have no regular political function. They are elected to contribute with their general knowledge and skills of corporate governance as participants in a college (from interviews: board member 1; board chair), but

this point does not seem to be absolutely clear. Typically, on the local websites some of the health companies report the political affiliation of the members (if any), while other present the directors through a personal CV.

There are fourteen members in the main board, including five members elected by and from the employees. Most of the board members in this board have former experience from political activities (parliament, county boards, and municipalities). The users are represented round the board table, but they have no right to participate, discuss or vote. Behind the union representatives there are two large labour organisations and several smaller ones. The chair at the time of writing is number three in a row. The first one was in office from the start in 2007 until April 2011, while the next was a vice chair and filled in between two elections. The present chair was further elected in January 2012. The first board chair was a woman, while the two next ones have been men. Healthy had a female CEO until November 2012. The current CEO is a man with a medical background, but he has further experience as an executive manager and a board chair. Finally, six men and eight women are members of the main board (Healthy's website).

3.12.3 Vision, goals and values in Healthy

The board members are working based on a vision of "High quality health services equal to all, regardless of age, place of residence, ethnic background, gender or personal economy (Healthy's website - strategy document 2013-2020).

Healthy is further underlining the importance of quality, safety and respect, and knowledge based practice is separately mentioned as an important priority area. A central focus on the patients' needs is coming through in documents with a high degree of details. Examples thereof are two of Healthy's goals:

- Hospital infections should be reduced to a level smaller than three per cent

- Patients should have a doctor appointment as soon as they have got the referral from their general practitioner

In a former strategy document (2007-2012), the goals included one direct statement related to the board, implementing the board members' decisions in its restructuring program. This goal had got the same weight as concrete goals regarding lying days in hospitals, corridor patients, the speed of patient records and patient safety. In the latest revision of the strategy (2013-2020) this goal was however, removed, but "quality and knowledge" is still presented as one of the values aligned with "openness and involvement" and "respect and anticipation" – all coined as Healthy's "building blocks of activity" (Healthy Strategy 2013-2020).

Knowledge management is further defined as a separate chapter in the strategy plan, where also the necessity of knowledge flow is underlined: "Develop and implement an overall strategy for knowledge management, improvement efforts and good practice" (Healthy's website - goals).

In consequence, the text and the goals in the strategy document are focusing on knowledge and skills for future development. Healthy's strategy plan thus underpins the arguments reported in the first part of this section - a case study of this company fits well in with the subject in the thesis (Healthy's website – Strategy Document 2013-2020).

3.12.4 Healthy - the issues

From the very beginning Healthy has been reported on in the media with alarming news coming through almost all the time. As a result of the merger, a huge reorganisation project was initialized. This project has turned out to be controversial, among other factors because of its several main organisational changes. These changes were initiated in the capital with one hospital closed down, another further developed and several main services moved between hospitals. The intention was to collect specific competences in clusters and thus improve the

service quality. As a result a large number of employees had to move to other hospitals, some might lose their work while other might change their working area (Healthy's Website - Strategy Document); Newspapers articles).

Further, economic issues are obviously present which makes the discussions harder and more difficult. This reorganisation and the income distribution between the hospitals were in one or another way mentioned at almost every meeting in the main board, and most of the interviewees put these issues forward.

3.13 Healthy - data collection and analysis

In the following section I will describe the data collection in the case study. I was observing the board meetings of the main board during the fall 2010 and then again from October 2010 until January 2012. I have further conducted six interviews - with the first board chair, the CEO, who was in post until November 2012, and two board members. One of these two board members has been sitting in this board and similar boards for several years, while the other one had only got about one year's experience in this sort of board when the interview was conducted. I further interviewed one union representative and the main representative from the users. In addition I collected a number of written reports, board items, plans and articles from the media. The data collection is thus based on triangulation (Yin, 2009). When describing and analysing the results, these three different angles of data collection are, as previously reviewed, meant to secure a more complex and wider covering of the current features of the board's methods of working.

My observations at the board were approved by the Business School Ethics Committee in June 2011. The board meetings are in general open for the public, which meant that I did not need a specific acceptance from Healthy, but the board as a whole was informed of my project by the chair and the communication director. Further, the CEO and the chair sent an e-mail to

all the board members with information of this project, encouraging board members to participate in interviews when asked.

3.13.1 Meeting observations

Between March 2010 and February 2012 I was present at eleven out of twelve board meetings, observing the board in general and the board members way of exchanging and sharing knowledge and information in special. By board room observations the intentions were to understand the general conduct of board affairs and how board processes work (Daily et al, 2003; Pettigrew, 1992; Zahra & Pearce, 1989). Exploring processes between the board and various stakeholders requires closeness, and for many purposes, a direct involvement in the question being studied is recommended (Leblanc 2005; Pye and Pettigrew 2005). The aim of this study was to investigate the effect of absorptive capacity on board task performance.

When conducting participant observation research, an important decision to be taken is about the involvement of the researcher, varying from pure observation to full participation (Machold & Farquhar, 2013). There are, however, advantages and disadvantages in any design (Hammersley & Atkinson, 1995). I was allowed to observe the board meetings without any participation. Such participation could have been interesting and might have opened for more detailed information, but Healthy did not offer participation possibilities. However, there are advantages related to non-participant observations (Machold & Farquhar, 2013).

The table below summarises the board observations. More details will be described in the findings. All minutes from the board meetings are available on request.

Table 15: Healthy – an overview of observed board meetings

Date	Time *	Location
4th March 2010	09.00 - 15.10	Meeting Centre, Oslo
9th June 2010	09.00 - 15.30	Meeting Centre, Oslo
4th Nov 2010	09.00 - 16.30	Meeting Centre, Oslo
16th Dec 2010	09.00 - 16.05	Meeting Centre, Oslo
17th Febr 2011	09.00 - 13.10	Meeting Centre, Oslo
17th Mar 2011	09.00 - 13.25	Hotel Norge, Brumundal
16th June 2011	09.00 - 15.50	Meeting Centre, Oslo
14th Sept 2011	09.00 - 13.45	Meeting Centre, Hamar
20th Oct 2011	08.00 - 13.05	Voksenåsen hotel, Oslo
17th Nov 2011	09.00 - 15.30	Meeting Centre, Oslo
20th Dec 2011	Absent **	
16 Febr 2012	09.00 - 15.05	Meeting Centre, Oslo

* Usually I had to leave the meeting an hour or more earlier, since the board closed the meetings for special cases in the end of each meeting.

I made notes at all meetings. These notes were designed as described by Eisenhardt (1989b). I wrote down “whatever impressions occur” (Eisenhardt, 1989b, p.539). These notes have

served as a background when analysing, but due to their nature, they are not suitable for tabulated presentations.

3.13.2 Data from Newspapers

During my time observing Healthy the company was regularly described, criticised and discussed in the newspapers. During the late spring and fall 2011 I collected articles from the biggest Oslo newspapers and the Norwegian Telegram Bureau (NTB) to supplement my observations. An overview of these articles is presented in the table below:

Table 16: Data from newspapers - Healthy

Date	Newspaper	Subject
10th May 2011	"Verdens Gang"	Reorganisations and cost cuts are destroying the quality of health service
20th May 2011	"Verdens Gang"	Emergency Capacity - the employees are making protests
30th May 2011	"Dagbladet"	The hospital board members declare cuts of costs
6 th June 2010	"Verdens Gang"	CEO at the University hospital quits.
10th June 2011	"Verdens Gang"	The minister is criticized in the Parliament for her handling of the hospital situation.
8th Sept 2011	NTB	Serious failures in patient care are described in a fresh report
21 st Sept 2011	NTB	The minister of Health Care in Norway arranges a meeting with the board members. Subject: The University hospital uses about £ 100,000 beyond the budget every day
12th Oct 2011	NTB	Healthy has paid more than £ 40 Million to consultants during the last three years
17th Oct 2011	NTB	Political initiatives on top level to remove the top management of Healthy
20th Oct 2011	"Aftenposten"	A letter from a worried nurse
31st January 2012	NTB	7 out of 9 board members were told to leave the board. New members are entering.

3.13.3 Data collected by interviews

An important part of the data for the case study is represented by the interviews. During the fall 2011, I conducted six interviews. With the intention of covering the different groups of board members and the diversity in the board, I was interviewing the board chair and the CEO. As described above, the CEO is not a formal member of the board, but he/she has the right to speak up at meetings. Furthermore, she/he is responsible for implementing board decisions.

I further conducted interviews with two other board members, one female and one male, one had been sitting in this board from the beginning in 2007, while the other one was in her first board period. Since the behaviour of the board members as well as their opinions on and experiences from the board might vary depending on the board members' age, gender, education and experience, which are some of the "usual suspects" (Finkelstein & Mooney, 2003), the aim was to avoid bias based on these criteria. It was hard to get agreement from any of the union representatives to give an interview. They did not give any reason why, but in general all board members were reluctant to comment on board items and discussions. The union representative, who eventually participated, had been central and active in her organisation and in the cooperation between the organisations for the last five years. The sixth interviewee was the main representative of the users. The users have got two representatives who are sitting at the table during the board meetings, but they are not allowed to participate in discussion or vote - just answer questions.

The interviews are one of several tools in the analyses of the research question in the qualitative analysis: "How can the effect of absorptive capacity on board task performance be described and explained?" Other observations - from the newspaper articles and from the behaviour from the union representatives at some of the board meetings - might show a trend where these two groups differ from the general board members in the views on the

information and knowledge flows. Thus, I decided to include representatives from the employees and the users in my interview group.

I used semi structured interviews where the subjects and issues were built around subjects and issues which derived from the documents (media reports). These subjects and issues were described for the interviewees, while they were all free to answer based on their own reflections, ideas and opinions. The interviewees were presented for issues rather than specific questions, but I used the possibility of asking follow up questions if necessary (Thomas, 2011). The interviewees were all asked for personal data as date and place of birth, education, work experience and experience as a board member. In addition I used a schedule as the basic plan for the interviews. (This schedule was presented for, and accepted by, Healthy in advance of my interviews):

"In my main interview scheme I will use a semi-structured approach and two scenarios.

First; the company has been through several economic crises, and I intend to start describing this situation and ask them to tell what happened in the board with my focus on knowledge management.

Secondly; I will use the conflicts between the different hospitals and institutions related to this board as the next scenario.

My goal is to find information of the following statements/questions:

- *Individual knowledge*
- *Common knowledge*
- *Teamwork in the board*
- *Transmission mechanism*
- *Who was trusted in the critical situation?*
- *What kind of responsibility and actions were taken by the board?*
- *What was the importance of the CEO and her team in the actual situation?*
- *How and to which degree is the knowledge explored and introduced to the board*
- *How and to which degree is the knowledge used in the board*
- *Does existing knowledge play an important role when decisions are made?*
- *Which roles do the CEO and her team play in exploring, sharing and using new and existing knowledge?"*

(From the interview description which was presented for Healthy)

All interviews lasted from one hour to one hour and 25 minutes. The interviews were further fully recorded and later transcribed. Since all interviews were conducted in Norwegian, they were translated to English before coding and analysing. Two of the interviews are enclosed in the appendices (the interview with the chair and the interview with the union representative).

The details of each of the interviews are listed in the table below:

Table 17: Summary of the interviews of board members in Healthy

	Role	Date	Where	Time started	Time ended
1	Board member	3rd August 2011	Interviewee's office	12.00	13.00
2	Board member	27th September 2011	IKEA - the restaurant, Oslo	14.00	15.15
3	Union representative	19th September 2011	Interviewee's office	11.00	12.00
4	Users' representative	16th October 2011	Comfort hotel, Skien - reception	Kl 18.00	19.25
5	Board chair	21st October 2011	Interviewee's office	Kl 13.00	14.00
6	CEO	21st November 2011	Interviewee's office	Kl 12.00	13.05

Healthy's documents, the observations from board meetings, the newspapers articles and the interviews represent together the data which the results and conclusions are based on.

3.13.4 Qualitative data analysis in the case study

The reason for applying a case study can be an intention of explaining the relationships between variables by analysing the same phenomena by various methods. As explained, the aim of this study was to investigate the effect of absorptive capacity on board task performance. Furthermore, in this qualitative study I am working with a relatively new concept in the board context since absorptive capacity has not former been analysed in a board context. The goal is thus to answer the research question: "How can the effect of absorptive capacity on board task performance be described and explained?" The study will therefore be exploratory. Nevertheless, when utilising triangulation to analyse the connections and importance of the variables, some explanations should appear. The purpose of this case study will thus have an exploratory as well as an explanatory intention. As described in chapter 3.3, there are various methods when analysing case studies exploratory and explanatorily. Based on the collected information an exploratory model will be built (Thomas, 2011). Further, I will study how persons behave, argue, cooperate and utilise the available information and knowledge. The persons in a social context are thus the observed elements. In this context the interpretative case study fits in. In addition to the understanding of the research subject itself, a deep description and explanation of the environments are crucial to obtain a correct picture of the research questions, the observations and the conclusions (Thomas, 2011).

I will apply a method described as "the Constant Comparative Method - Eliciting Themes" This method is the standard one of interpretative inquiries (Thomas, 2011, p.171-172). By going through data again and again, comparing each element with all other elements, themes are developed from merging of data. These themes, also named categories, are the building blocks of the analysis. Further, within-case (Eisenhardt, 1989b) and cross respondent, cross data analyses will be conducted for the three dimensions of absorptive capacity. In these

themes the variables from the quantitative analysis as well as the elements from the social context will be included.

Based on these analyses, patterns and concepts will be derived and conclusions presented as described by Thomas (2011).

To further describe the method of analysis I will present a detailed worked example below.

About “consensus” – an example

The analysis was conducted through four stages: (past)

- Stage 1 was based on the emergence of themes from observations and themes from the media reports.
 - Stage 2 was based on the identification of themes from the interviews transcripts.
 - At stage 3 these themes were compared with data from the other data sources to see if they were confirmed or not. The themes were further compared across respondents.
- There was also an iterative process between the stages.
- At stage 4 the emerged categories were compared against literature.

Table 18: A worked example of case data analysis - stage 1

<i>Data</i>	<i>Observations</i>
<i>From media</i>	Consensus has not been a theme in the media.
From meeting observations	<ul style="list-style-type: none"> • Consensus was observed for all items at 9 out of 11 board meetings • At one meeting one of the items was resolved by vote • At one meeting two of the items were resolved by vote

Table 19: A worked example of case data analysis - stage 2 and 3

	<i>Board member 1</i>	<i>Board member 2</i>	<i>Union representative</i>	<i>Users' representative</i>	<i>Board chair</i>	<i>CEO</i>
From interviews	<p>“Well, it happens that there are disagreements, but it is not very often because we in a way initially want to make a consensus”</p> <p>“I might think that the chair was almost too concerned with finding a compromise instead of just let it be a contradiction”</p>	<p>“that there should be a consensus, so in a way we will not get a voting pro et contra. There has occasionally been, but not for.... I am sure I am not tough enough to do it either.”</p>	<p>“So, and it is clear that this also makes things very difficult for the other organisations to cooperate and have consensus, because we do not always totally agree, and we coming from a Union context, we are probably more aware trying to include our item in the decision.</p>	<p>”They use a lot of time to agree. And I think it might be, be a bit wrong to show that they agree so much, too.”</p>	<p>” If we have agreed, and you have a genuine believe that going on discussing things makes us ending on something which, that if everyone agrees, then it is probably more correct, then it might be a better decision than what was first laid there.”</p>	<p>Then there was a creative process, and then there was a lot disagreement, too, but then we made it the way that we had many seminars as mentioned, and then we worked through it, didn't we? And when we ended up with the decision, I believe we had used 30 seconds, but this was because everything had been discussed, right?”</p>
Comparison across respondents	<p>The two board members explained reasons for the use of consensus in Healthy's board, also admitting that the use of consensus was too extensive and inhibited disagreements.</p> <p>Furthermore, the CEO, the chair and the two ordinary elected board members all defended the need for consensus</p>		<p>The users' representative and the union representative were the two who expressed doubt about the consensus practice.</p>		<p>The CEO and the chair argued for consensus as a means of good board performance. Furthermore, the CEO, the chair and the two ordinary elected board members all defended the need for consensus</p>	

A full list of the quotes related to consensus is reported in appendix IV.

Stage 4

Research on consensus practise in boards is limited:

- Leblanc (2005) included the concept in a performance evaluation for the board chair in relation to board leadership.
- Gautam & Booker (1994) studied the effects of board size and diversity on strategic functions of boards. They proposed that “large boards may face a number of barriers in reaching a consensus on important decisions”, but this was not empirically tested.
- Bainbridge (2002), referring to Janis (1972), proposed that groups as boards value consensus more than they do a realistic appraisal of alternatives.

3.14 Conclusions

Based on the literature and the methodology review this research project will be conducted by

1. A quantitative analysis based on data from the Norwegian Value Creating Board Survey, testing the hypotheses and the model derived in Chapter II. Regression and Structural Model Equations will be used as the statistical tools in the analyses.
2. A qualitative analysis based on case study of Healthy with multiple data sources. A data analysis will be conducted by the Constant Comparative Method.

The data collection and the analyses will be conducted by the methods which have been reviewed in this chapter.

IV. Results

4.1 Introduction

In this chapter the results from the quantitative and the qualitative analysis are presented. In both analyses the data were checked to as far as possible secure an unbiased, valid and reliable source. In the quantitative analysis I applied SPSS v.19 and AMOS 19 (with structural equation models) for the calculations of the statistical results. The "Constant, Comparative Method" (Thomas, 2011) was used in the case study. The results are presented in tables and figures in the following chapters.

4.2 The quantitative results

4.2.1 Descriptives

First, all the variables were entered and the standard descriptive statistic (table 20) were calculated. The table below shows the dependent, mediating, independent and control variables.

Table 20: Descriptives

	N	Minimum	Maximum	Mean	Std. deviation	Skewness		Kurtosis	
	<i>Statistic</i>	<i>Statistic</i>	<i>Statistic</i>	<i>Statistic</i>	<i>Statistic</i>	<i>Statistic</i>	<i>Standard error</i>	<i>Statistic</i>	<i>Standard error</i>
<i>Control</i>	477	1.00	5.00	3.4646	0.7118	-0.195	0.112	0.422	0.223
<i>Service</i>	477	1.00	5.00	3.2729	0.7642	-0.317	0.112	0.288	0.223
<i>Strategy</i>	477	1.00	5.00	3.4544	0.8132	-0.316	0.112	0.217	0.222
<i>Exploratory learning</i>	484	1.00	5.00	3.2169	0.6719	-0.106	0.111	0.066	0.222
<i>Transformative learning</i>	480	1.29	5.00	3.9237	0.6866	-0.667	0.111	0.566	0.222
<i>Exploitative learning</i>	422	1.00	5.00	2.8721	0.8963	0.171	0.119	-0.365	0.237
<i>Absorptive capacity</i>	484	1.38	5.00	3.3664	0.5781	-0.266	0.111	0.648	0.222
<i>Presence of knowledge and skills</i>	484	1.67	5.00	3.8313	0.6046	-0.466	0.111	0.644	0.222
<i>High tech firm</i>	481	.00	1.00	0.2859	0.4517	0.951	0.111	-1.097	0.222
<i>Firm size</i>	478	.00	10.65	4.0996	1.7917	0.355	0.112	0.631	0.223
<i>Number of board members</i>	482	1.00	12.00	5.1992	2.0948	0.383	0.111	-0.076	0.222
<i>Board ownership</i>	482	0.00	100.00	17.4208	26.3063	1.583	0.111	1.731	0.222
<i>Chair ownership</i>	482	0.00	100.00	16.8157	29.22	1.767	0.111	2.004	0.222
<i>TMT ownership</i>	482	0.00	100.00	27.5379	36.9573	1.039	0.111	-0.487	0.222
<i>CEO duality</i>	484	0.00	1.00	0.0868	0.2818	2.945	0.111	6.7	0.222
<i>Insider ratio</i>	476	0.00	1.00	0.3106	0.2649	0.921	0.112	0.623	0.223
<i>Number of employee elected board members</i>	483	0.00	7.00	0.7888	1.0973	1.268	0.111	1.514	0.222

4.2.2 Skewness and kurtosis

Skewness and kurtosis are measuring the fit of data compared with the normal distribution.

While skewness measures the distribution of observations on the left vs. right side of the mean, the kurtosis measures the values of the observations compared with values from the normal distribution as explained in chapter III, section 3.5.2. Table 21 shows the normalised skewness and kurtosis values for the independent variable, the mediators and the dependent variables.

Table 21: Normalised skewness and kurtosis

	Skewness			Kurtosis		
	Statistic	Standrad error		Statistic	Standard. error	Normalised value
<i>Control</i>	-0.195	0.112	-1.741	0.422	0.223	1.941
<i>Service</i>	-0.317	0.112	-2.830	0.288	0.223	1.291
<i>Strategy</i>	-0.316	0.112	-2.821	0.217	0.222	0.977
<i>Exploratory learning</i>	-0.106	0.111	-0.955	0.066	0.222	0.297
<i>Transformative learning</i>	-0.667	0.111	-6.009	0.566	0.222	2.549
<i>Exploitative learning</i>	0.171	0.119	1.437	-0.365	0.237	-1.540
<i>Absorptive capacity</i>	-0.266	0.111	-2.396	0.648	0.222	2.919
<i>Presence of knowledge and skills</i>	-0.466	0.111	-4.198	0.644	0.222	2.901

The table shows that most of the variables are significantly normally distributed, or they are close up to the limits (Field, 2009). None of the variables show extremely high values of normalised kurtosis, while the normalised skewness is higher for presence of knowledge and skills and transformative learning. Most of the variables have got a negative skewness, which means that the distribution is heavy on the right side, i.e. there are more positive, high values compared with the lower ones. The respondents seem to typically report high values on the Likert Scale on knowledge and transformation thereof. I checked if transformations of the data (logarithmic, squared, square root) could improve the skewness values, but this did not occur. The confirmatory factor analysis in chapter III conducted by AMOS showed satisfactory values of factor loading, and the Cronbach's alpha values are higher than 0.7, which is the advised limit (Field, 2009; Hair et al, 2010). Ideally, these two skewness values could have been lower, but the size of the sample may play a certain role, since all samples move towards a normal distribution when the number of observations increases (Field, 2009).

These values would probably have been smaller with a bigger sample. The result from the skewness and kurtosis tests should thus not represent any serious issue.

4.2.3 Missing values

Cases with missing values may obscure the results. Missing data may further reduce the precision of calculated statistics because we actually have less information than originally planned. Another concern is that the assumptions behind many statistical procedures are based on complete cases, and missing values can limit the scope of available tests. Structural equation modelling (AMOS) has limitations related to missing values when testing model fit (GFI, AGFI and RMR are not available).

The Norwegian Board Survey includes a high number of statements/questions and variables. The total number of cases in the “Innovation Survey” is 488. Missing values of the variables are reported below:

Table 22: Missing values

	Number	Per cent
<i>Control</i>	11	2.3
<i>Service</i>	11	2.3
<i>Strategy</i>	11	2.3
<i>Exploratory learning</i>	4	0.8
<i>Transformative learning</i>	8	1.6
<i>Exploitative learning</i>	66	13.5
<i>Absorptive capacity</i>	4	0.8
<i>Presence of knowledge and skills</i>	4	0.8
<i>Valid N (listwise)</i>	488	100

Except for exploitative learning the missing values are limited. The per cent age rate of missing values for the rest of the variables is between 0.8 and 2.0. Ideally, all the variables

should have been without missing values, but with 488 cases, the study comprises more than 400 cases without missing values, as reported in table 19. If the missing data are in a non-random pattern or more than 10 per cent, the missing data should be addressed (Hair et al, 2010). Data are considered missing completely at random if the data do not depend on any other variable in the dataset or on the values of the variable itself (Hair et al, 2010; Rubin, 1976). The data in this study are correlated and are therefore not completely at random. Further, since all the variables, but one, have a substantially lower number of missing values than the limit, and the per cent rate of exploitative learning is not far away from 10 per cent, I will solve the missing value issue inside the regression and the SEM data programs.

The presence of missing values is treated differently in AMOS and SPSS. In SPSS cases with missing values can either be excluded by crossing the command "missing values list wise", or the missing values can be estimated based on existing means and standard deviations by selecting "missing values pairwise".

In these analyses the "list wise" option has been selected to avoid a bias related to exploitative learning. AMOS calculates the missing values by maximization likelihood analyses, applying a statistical model to fit in the missing values based on the existing ones by iteration. When estimating missing values in AMOS, some of the tests of significant validity and reliability are not available.

4.2.4 Confirmatory factor analyses

The measurement model was tested for validity by structural equation modelling (SEM) before testing the structural model (Hair et al, 2006). The dependent, the independent and the mediating variables were all entered and tested based on AMOS 19 software package as reported in connection with the measurements in chapter III (section 3.10). The factor loadings report the importance of each factor for the variable. In general, a factor loading of

0.3 or more is considered to be of importance, while 0.4 is often advised as a minimum (Field, 2009), while other researchers advice a minimum of 0.5 (Hair et al, 2010). The factor loadings of the variables in this model run from 0.35 to 0.83 with the majority between 0.6 and 0.7. When including the items with the lowest factor loading, the effect of Cronbach's alpha was emphasised as reported in section 3.10. All factor loadings were significant at a 0.01 level. However, the significance of the factor loading will depend on the number of observations as well (Field, 2009).

4.2.5 Model fit

Below model fit is controlled for the factor analysis.

As discussed in section 4.2.3 regarding missing values, SEM employs mean estimates for the observations with missing values. However, AMOS has developed limited tools for the analyses when data is missing. The GFI, AGFI and RMR are in this situation not calculated. This is because it is not clear how to incorporate means and intercepts into the conventional formulas for these statistics. Alternatively, missing values could have been estimated in advance of the SEM calculations. However, when conducting such estimation the variance of the sample is reduced. In this thesis, where both regressions and SEM are applied for the analyses, where the significance is confirmed in the regressions and where the number of missing values is limited, I did not include these calculations in the study.

The results from the chi-square tests and the RMSEA are listed in the table below:

Table 23: RMSEA and Chi-square tests

	RMSEA	Chi-square	Chi-square/df
<i>Presence of knowledge and skills</i>	0.100	53.163	5.9
<i>Exploratory learning</i>	0.243	416.223	29.7
<i>Transformative learning</i>	0.123	74.970	8.3
<i>Exploitative learning</i>	0.105	32.070	6.4
<i>Service</i>	0.144	55.166	11.0
<i>Control</i>	0.184	768.782	17.5
<i>Strategy</i>	0.251	63.528	31.8

The RMSEA value is sensitive to the degrees of freedom and, therefore, tends to be high for complex models (models with large number of estimated parameters) unless the sample size is large enough (Byrne, 2001). The measurements of the dependent variables are based on earlier research and publications, which should imply that the number of observations and the complexity of the model are the main reasons why some of the results have values higher than recommended. Further, Hairs et al, (2010) explains: “although previous research has sometimes pointed to a cut-off value of 0.05 or 0.08, more recent research points to the fact that drawing an absolute cut-off for RMSEA is inadvisable” and “RMSEA was best suited for use in confirmatory models as samples become larger (more than 500)” (Hair et al, 2010, p.667).

When testing measurement models, the aim is a low value of the chi-square test. The number of observation has got an impact also on the result of chi-square tests. Furthermore, the higher number of indicators because of better measurements of constructs, the higher values will appear in the tests (Hair et al, 2010, p.666).

Ideally, the values in some of the tests in table 23 could have been lower, but a high number of significant items will on the other hand improve the construct for testing, and the results of model fit should be rated in relation to the number of observations. Nevertheless, the results for the measurements derived in this thesis - the mediators - have obtained results in these tests close to the variable with the best results from earlier research, which is presence of knowledge and skills. Further, the results for the mediators are all similar to or better than the ones for the dependent variables.

4.2.6 Correlations

The next phase in this quantitative analysis will be the calculation of the correlations, which are reported in the table below. The results will uncover if there is a significant correlation between the variables.

Table 24 - Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.High tech firm	1																
2.Firm size	.154**	1															
3.Number of board members	.094*	.523**	1														
4.Board ownership	-.088	-.145**	-.134**	1													
5.Chair ownership	-.080	-.149**	-.348**	-.086	1												
6.TMT ownership	-.025	-.221**	-.436**	-.025	.032	1											
7.CEO duality	-.082	-.198**	-.277**	.084	.220**	.290**	1										
8.Insider ratio	-.004	.038	-.120**	-.059	.115*	.320**	.152**	1									
9.Number of employee elected board members	.143**	.534**	.662**	-.208**	-.234**	-.295**	-.181**	.237**	1								
10.Knowledge and skills	.049	-.123**	-.237**	-.020	.165**	.329**	.193**	.170**	-.135**	1							
11.Exploratory learning	.085	.015	-.077	.024	.089**	.062	.068	.101*	.000	.437**	1						
12.Transformative learning	.063	-.011	-.156**	-.036	.115*	.163**	.065	.041	-.111*	.518**	.559**	1					
13.Exploitative learning	.143**	.283**	.105*	-.007	-.034	-.022	-.091	-.056	.089	.191**	.258**	.182**	1				
14.Absorptive capacity	.120**	.090	-.064	-.005	.086	.080	.005	.027	-.024	.488**	.774**	.758**	.722*	1			
15.Control	.037	.004	-.142**	.003	.121**	.208**	.171**	.197**	-.013	.555**	.581**	.475**	.234**	.557**	1		
16.Service	-.021	-.048	.0248*	.029	.132**	.237**	.087	.046	-.209**	.508**	.484**	.522**	.212**	.516**	.538**	1	
17.Strategy	.054	-.06	-.017	.013	.066	.138	.073	.014	-.074	.308**	.437**	.411**	.262**	.480**	.455**	.456**	1

* $p < 0.05$, ** $p < 0.01$

The table shows that a positive and significant correlation is present between the independent variable and the mediators and between the mediators and the dependent variables. Some of the control variables are significantly correlated to each other and to the dependent and independent variables. All the coefficients of dependent, mediating and independent variables are significant. However, no multicollinearity was found, since none of the predictor variables had a correlation $> 0.8-0.9$ (Field, 2009, p.224), and when testing for VIF (variance inflation factor) all reported values were 2 or lower. Values lower than 10 are acceptable (Hair et al, 2010, p.205). The variable AC (absorptive capacity) shows results close up to multicollinearity with all the three learning processes. However, absorptive capacity is calculated as the mean of the effect of exploratory, transformative and exploitative learning, and based on theories on multicollinearity, this result will be expected with such a relationship between the variables. As a consequence, in the analyses the variable AC will never be used together with the variables exploratory, transformative or exploitative learning. Instead, the effects of the learning processes as mediators will be tested individually as well as simultaneously. The significant correlations between the three learning processes might indicate complementarities (Lichtenthaler, 2009; Milgrom & Roberts, 1995).

Finally, since correlations between the control variables and the dependent variables are reported, the control variables will be included in the regression analyses.

4.3 Tests of hypotheses

As explained in chapter III, the hypotheses will be tested by regressions and SEM. Altogether, six models have been tested. In model I the relationship between the control variables and the dependent variables is tested, and in model II presence of knowledge and skills is included to analyse the effect of this antecedent on the three dependent variables. Mediating effects by exploratory, transformative and exploitative learning respectively are tested in model III, IV

and V. Finally, mediating effects and complementarities by and between the mediators are tested in model VI.

When testing the mediating effects the following procedure was followed (as stated by Baron and Kenny (1986)):

1. Testing if the antecedent (independent) variable has effects on the mediating variables
2. Testing if the antecedent (independent) variable has effects on the consequences (depending variables)
3. Testing if the mediators have effects on the consequences (depending variables)

If the effects of the antecedent are weaker when a mediator is entered into the equation, a mediating effect is supported (Baron and Kenny, 1986; Kenny, 2012). Lately, arguments have been made stating that SEM is the best tool when testing mediating effects. While multiple regressions can just examine a single relationship at a time, SEM can examine a series of dependence relationships simultaneously (Hair et al, 2010). When analysing interrelated questions as in this study, SEM can represent a stronger and even more appropriate tool. However, Kenny, who back in the eighties introduced the procedure described above, has recently argued that independent of the choice of tool, this procedure will be the same (Kenny, 2012). To underpin the results, both regressions and SEM analyses have been conducted. Details are reported below.

4.3.1 Results from the regression analyses

Tables 25-27 report the results from the regressions.

Table 25: Regressions - results for the control task

Control variables, independent and mediating and dependent variables	Model I	Model II	Model III	Model IV	Model V	Model VI
<i>High tech firm</i>	0.028	-0.018	-0.039	-0.021	-0.032	-0.042
<i>Firm size</i>	0.089	0.105*	0.069	0.072	0.100 [#]	0.073
<i>Number of board members</i>	-0.115	-0.088	-0.063	-0.071	-0.099	-0.071
<i>Board ownership</i>	0.003	0.014	-0.005	0.021	-0.017	-0.029
<i>Chair ownership</i>	0.089 [#]	0.024	0.008	0.012	-0.015	-0.034
<i>TMT ownership</i>	0.143**	0.021	0.059	0.014	0.015	0.047
<i>CEO duality</i>	0.113*	0.084*	0.082*	0.091*	0.079 [#]	0.073 [#]
<i>Insider ratio</i>	0.081	0.044	0.031	0.067	0.078	0.076 [#]
<i>Number of employee elected board members</i>	0.086	0.093	0.083	0.102 [#]	0.076	0.053
<i>Presence of knowledge and skills</i>		0.527***	0.333***	0.392***	0.486***	0.286***
<i>Exploratory learning</i>			0.412***			0.407***
<i>Transformative learning</i>				0.242***		0.039
<i>Exploitative learning</i>					0.142**	0.066 [#]
<i>R²</i>	0.096	0.335	0.466	0.374	0.340	0.472
<i>Adjusted R²</i>	0.078	0.320	0.453	0.358	0.321	0.454
<i>F-value</i>	5.275***	22.457***	35.270***	24.035***	18.324***	26.674***
<i>N =</i>	457	457	457	455	404	402

[#] - p<0.1, * - p<0.05, ** - p<0.01, *** - p<0.001

Table 26: Regressions - results for the service task

Control variables, independent and mediating and dependent variables	Model I	Model II	Model III	Model IV	Model V	Model VI
<i>High tech firm</i>	-0.011	-0.053	-0.070 [#]	-0.058	-0.061	-0.051
<i>Firm size</i>	0.148*	0.163***	0.135**	0.124**	0.096 [#]	0.003
<i>Number of board members</i>	-0.139*	-0.114 [#]	-0.095	-0.084	-0.094	0.029
<i>Board ownership</i>	-0.005	0.005	-0.010	0.019	0.004	0.020
<i>Chair ownership</i>	0.087 [#]	0.028	0.015	0.026	0.026	0.046
<i>TMT ownership</i>	0.187***	0.073	0.103*	0.070	0.068	0.056
<i>CEO duality</i>	-0.008	-0.035	-0.037	-0.026	-0.014	-0.037
<i>Insider ratio</i>	-0.021	-0.055	-0.065	-0.035	-0.059	-0.034
<i>Number of employee elected board members</i>	-0.116 [#]	-0.110 [#]	-0.118*	-0.094	-0.093	-0.133**
<i>Presence of knowledge and skills</i>		0.487***	0.335***	0.314***	0.473***	0.150***
<i>Exploratory learning</i>			0.324***			0.493***
<i>Transformative learning</i>				0.323***		0.186***
<i>Exploitative learning</i>					0.127**	0.050
<i>R²</i>	0.110	0.314	0.395	0.387	0.335	0.558
<i>Adjusted R²</i>	0.092	0.299	0.380	0.372	0.316	0.543
<i>F-value</i>	6.131***	20.434***	26.426***	25.469***	17.947***	37.619***
<i>N =</i>	457	457	457	455	404	402

[#] - p<0.1, * - p<0.05, ** - p<0.01, *** - p<0.001

Table 27: Regressions - results for the strategy task

Control variables, independent and mediating and dependent variables	Model I	Model II	Model III	Model IV	Model V	Model VI
<i>High tech firm</i>	0.069	0.043	0.022	0.037	0.108	-0.002
<i>Firm size</i>	0.044	0.053	0.021	0.011	0.000	-0.037
<i>Number of board members</i>	0.144*	0.159*	0.181**	0.187**	0.139*	-0.175**
<i>Board ownership</i>	0.032	0.038	0.020	0.052	-0.004	0.003
<i>Chair ownership</i>	0.089 [#]	0.052	0.036	0.046	0.006	0.006
<i>TMT ownership</i>	0.168**	0.099 [#]	0.135**	0.094 [#]	0.090	0.113*
<i>CEO duality</i>	0.044	0.027	0.025	0.037	0.068	0.066
<i>Insider ratio</i>	-0.013	-0.033	-0.046	-0.009	-0.014	-0.010
<i>Number of employee elected board members</i>	-0.103	-0.099	-0.109 [#]	-0.083	-0.061	-0.063
<i>Presence of knowledge and skills</i>		0.297***	0.115*	0.110*	0.269***	0.054
<i>Exploratory learning</i>			0.387***			0.262***
<i>Transformative learning</i>				0.347***		0.197***
<i>Exploitative learning</i>					0.226***	0.162***
<i>R²</i>	0.042	0.118	0.233	0.200	0.172	0.280
<i>Adjusted R²</i>	0.022	0.098	0.214	0.180	0.149	0.256
<i>F-value</i>	2.146*	5.925***	12.261***	10.063***	7.399***	11.619***
<i>N =</i>	456	456	456	454	404	402

[#] - p<0.1, * - p<0.05, ** - p<0.01, *** - p<0.001

The tables report several findings:

First, some of the control variables and the independent variable, presence of knowledge and skills, are significantly and positively related to all three board tasks. Second, presence of knowledge and skills has a stronger correlation to the service and control tasks, compared with the strategy task, but all relationships are significant. Third, exploratory, transformative and exploitative learning have a positive and significant impact on board task performance when tested individually (model III-V) and simultaneously (model VI).

Fourth, the impact on board task performance (control, service and strategy) by presence of knowledge and skills has lower values in all models when the mediators are included in the equations. For exploratory, transformative and exploitative learning a positive mediation is thus present for all three tasks (Baron & Kenny, 1986). Fifth, while the total impact of

presence and knowledge and skills is highest on the control task, the mediation is strongest for strategy. Sixth, for this task, the significance level of presence of knowledge and skills is also reduced when mediation is tested with exploratory or transformative learning.

Furthermore, the mediation between presence of knowledge and skills and board strategy is full when the complementarities of the learning processes are included (model VI). In the other models and for the other tasks, the mediation is partial. In model III-V all the mediations are significant on the 0.001 level, with one exception: for exploitative learning, individually tested (model V), the significance is 0.01 for the service task.

In model VI, with all three mediators included in the regressions, mediating effects of at least two out of three learning processes are significantly confirmed for all three tasks:

1. For the control task exploratory learning generally stands out as the strongest mediator, while transformative learning is not a significant mediator, and the significance of exploitative learning goes down from 0.001 to 0.1
2. For the service task, a significant mediation on the 0.001 level is confirmed for exploratory learning and for transformative learning, while exploitative learning is no longer a significant mediator
3. Finally, as reported above, a full mediation is present for the strategy task when the simultaneous effect of the three mediators is tested. The significance level in this test is 0.001 for all three mediators

Finally, as reported in section 3.5.3, VIF (Variance inflation factors) were calculated to recheck for multicollinearity. The highest VIF found in the model with simultaneous mediation of the three learning processes (model VI), was 1.7. In the other models VIF varied between 1 and 3, which is well within an acceptable range (Hair et al, 2010). Multicollinearity is thus not a problem in the analyses. R square and adjusted R square values

are highest in model VI (with the simultaneous mediating) for all three board tasks, which indicates presence of complementarities between the learning processes.

The level of adjusted R square is further highest for the service task, slightly lower for the control task and lowest for the strategy task. However, a level higher than 0.5 for the service task and 0.4 for control is remarkable. Further, all F-values are significant on a 0.001 level with good values in all models with one exception – model I when testing the strategy task.

In conclusion, the findings confirm that presence of knowledge and skills is a predictor of absorptive capacity with the three explanatory dimensions: exploratory learning, transformative learning and exploitative learning. These results fit well in with earlier studies and research: Cohen and Levinthal (1990) and Todorova and Durisin (2007) derived "knowledge source" and "prior knowledge" as the main antecedents of absorptive capacity (Cohen & Levinthal, 1990; Todorova & Durisin, 2007), while Zahra and George extended with the concept "knowledge complementarity", the degree to which the knowledge fits in with the actual needs of the company (Zahra & George, 2002). Furthermore, the three learning processes are individually and complementarily significant mediators on the relationship between presence of knowledge and skills and board task performance.

The complementarities of the learning processes as described in the literature (Lane et al, 2006; Lichtenthaler, 2009) are supported in this study. Complementarities imply that the magnitude of the overall absorptive capacity effect is larger than the sum of the marginal effects from each process. The findings therefore confirm that absorptive capacity as a whole, i.e. the combination of all the three learning processes, represents an important and adequate factor for explaining the level of board task performance.

This study thus supports the hypotheses, defining absorptive capacity as a significant mediator on board task performance (the strategy, service and control task) with presence of knowledge and skills as the independent variable. Absorptive capacity is further statistically connected to

a board context, here described by board task performance and presence of knowledge and skills in boards.

A full overview of the results of the hypothesis tests are presented in the table below:

Table 28: Results from hypotheses tests

		Regressions	
		Results	Sig.
H1a	Exploratory learning mediates the relationship between presence of knowledge and skills and board control performance.	Supported	p<0.001
H1b	Hypothesis 1b: Exploratory learning mediates the relationship between presence of knowledge and skills and board service performance.	Supported	p<0.001
H1c	Hypothesis 1c: Exploratory learning mediates the relationship between presence of knowledge and skills and board strategy performance.	Supported	P<0.001
H2a	Transformative learning mediates the relationship between presence of knowledge and skills and board control performance.	Supported	p<0.001
H2b	Transformative learning mediates the relationship between presence of knowledge and skills and board service performance.	Supported	p<0.001
H2c	Transformative learning mediates the relationship between presence of knowledge and skills and board strategy performance.	Supported	P<0.001
H3a	Exploitative learning mediates the relationship between presence of knowledge and skills and board control performance.	Supported	p<0.001
H3b	Exploitative learning mediates the relationship between presence of knowledge and skills and board service performance.	Supported	p<0.01
H3c	Exploitative learning mediates the relationship between presence of knowledge and skills and board strategy performance.	Supported	P<0.001
H4a	Exploratory learning, transformative learning and exploitative learning	Partly supported	Exploratory P<0.001,

	mediate the relationship between presence of knowledge and skills and board control performance.		transformative not supported, Exploitative, $p < 0.1$
H4b	Exploratory learning, transformative learning and exploitative learning mediate the relationship between presence of knowledge and skills and board service performance.	Partly supported	Exploratory $p < 0.001$, transformative $p < 0.001$, exploitative not supported
H4c	Exploratory learning, transformative learning and exploitative learning mediate the relationship between presence of knowledge and skills and board strategy performance.	Supported, full mediation	$P < 0.001$

4.3.2 SEM results

All the models presented in the regressions sections have been retested by SEM, and the findings are in general supported. In addition, I have tested the model in SEM by covariances between the variables. The results (model VII) are reported in the table below.

Table 29: Results from SEM testing (model VII)

	Covariances	Sign.level
Presence of knowledge and skills ⇔ exploratory learning	0.085	p<0.001
Presence of knowledge and skills ⇔ transformative learning	0.151	p<0.001
Presence of knowledge and skills ⇔ exploitative learning	Not significant	
Presence of knowledge and skills ⇔ control	0.206	p<0.001
Presence of knowledge and skills ⇔ service	0.216	p<0.001
Presence of knowledge and skills ⇔ strategy	Not significant	
Exploratory learning ⇔ transformative learning	0.106	p<0.001
Transformative learning ⇔ exploitative learning	Not significant	
Exploratory learning ⇔ exploitative learning	0.065	P<0.001
Exploratory learning ⇔ control	0.191	P<0.001
Exploratory learning ⇔ service	0.035	P<0.01
Exploratory learning ⇔ strategy	0.068	P<0.001
Transformative learning ⇔ control	0.091	P<0.001
Transformative learning ⇔ service	0.142	P<0.001
Transformative learning ⇔ strategy	0.116	P<0.001
Exploitative learning ⇔ control	Not significant	
Exploitative learning ⇔ service	0.052	P<0.1
Exploitative learning ⇔ strategy	0.176	P<0.001

(These results are also presented in figure 18 in chapter V).

Since all three dimensions of absorptive capacity are simultaneously defined in the SEM model, the results will be compared with model VI in the regressions. Interestingly, these SEM results underpin and partly strengthen the trends in the regression model.

First, the SEM analyses confirm the mediating effects by exploratory and transformative learning on all three board tasks. Next, for exploitative learning the SEM results strengthen the trends from the regressions, when the SEM analyses decline a significant relationship between presence of knowledge and skills and strategy. Furthermore, there is no significant relationship between exploitative learning and the control task in the SEM-model. For the service task the relationship is low, but significant. In conclusion, SEM analyses with simultaneous calculations of all variables, underpin the hypotheses and the results from the regression. Finally, the SEM-model turned out with an acceptable RMSEA on 0.081 and a

chisquare/df relationship on 4.22, which is also close up to an acceptable level for a complex model (Hair et al, 2010).

However, the same SEM model tested with correlation between the board tasks as a part of the model, turned out with stronger results (RMSEA on 0.076 and chi-square/df rate on 3.84). This model further reported a full list of significant covariances between all the variables and with generally higher levels of covariances. The finding itself is interesting and should be further investigated. Since the focus in this thesis is on other parts of the model, I have not gone on investigating the impacts of correlated board tasks.

4.3.3 Summary

In conclusion, the main hypothesis stating that absorptive capacity works as a mediator between presence of knowledge and skills should have been thoroughly tested and confirmed.

The elaborated model with its measurements has in this part of the thesis thus been verified when applying the data collected in the Norwegian Value Creating Board Survey. These findings will be further discussed and compared with existing literature in chapter V.

4.4 The qualitative results

The research question is the obvious starting point for the qualitative analysis. Based on the collected information - from records, newspapers, observations and interviews, the analysis will focus on the response this information represents to this question. In my report of the results from the case study at Healthy I will apply a narrative approach as recommended by Thomas (2011). The background for the narrative will, as described in section 3.13.4, be a thorough analysis of the interview transcripts by means of the constant comparative method, reviewed together with data from newspapers, meeting observations and documents in Healthy's files.

4.4.1 About the qualitative context

The research question for the qualitative part of the thesis is: "How can the effect of absorptive capacity on board task performance be described and explained?" Absorptive capacity has been divided into three learning processes, exploratory learning, transformative learning and exploitative learning (Lane et al, 2005; Lichtenthaler, 2009). The quantitative analysis concluded that these three processes are correlated to each other and should therefore not be considered separately. The relationships between the learning processes or lack thereof will also be further explored in the case study.

Healthy is a company in the health sector, which means that the formal educational knowledge and skills are mainly linked to medical education and experience. The main board in Healthy will however, work with a wide range of tasks related to organisation, management, internal and external information, research, product quality and leadership. The board tasks will be similar to the tasks which were analysed in the quantitative part of the thesis - control, service and strategy. In the company the board tasks are described with these words:

Our tasks consist of offering health services of a good quality to every single person. At the same time, the large public values in the specialist health service, staff, competence, equipment and constructions, are to be administered in a future oriented manner (Healthy's website - strategy document 2007-2012).

However, as stated in the research question, this case study is not mainly about which board tasks most commonly are performed in Healthy, but about how presence and knowledge and skills and the learning processes have an impact on the board performance.

"Knowledge and skills" in this context will be a complex concept in which all information transferred to board members, staff members, employees and other persons and groups is a central part. "Knowledge" will thus include advanced medical competence and related information when required, as well as practical information to actual participants to keep

service delivery and management systems going. The focus will therefore be on a range of knowledge and information which is crucial to match the stated goals of Healthy, and the analyses will include knowledge and information flows between the various decision-makers in Healthy. This wide way of defining knowledge is in accordance with definitions used in other articles on absorptive capacity (Flatten et al, 2011b).

Despite the correlation between the learning processes, there is still a possibility that some learning processes feature more prominently than others. The effects of absorptive capacity on the board tasks will therefore depend on the way explorative, transformative and exploitative learning manifest them in this context.

4.4.2 Qualitative data collection in the case study

Healthy has an impressive portfolio of strategic documents covering the near and distant future. These plans have been and will still be, translated into practical decisions and projects which are broadly described in new project documents. All this information represents an important and central source for the case study and will be utilised in the analyses. However, a new strategic plan has been developed after the data collection in Healthy was finished. This analysis will mainly lean on the strategy plan that was current at the time of data collection.

During the period of the field research, I collected articles from the biggest newspapers in Norway when they presented news, issues, problems or results from Healthy. The table below presents the articles, the themes and the main content with a short report of each article:

Table 30: Articles from newspapers

Date	Newspaper	Subject	Issues	General observations and comments
10th May 2011	"Verdens Gang"	Reorganisations and cost cuts are destroying the quality of health service	The CEO at the Hospital agrees with the employees, but the general board members (local board) disagree and decide to go on with the reorganisation	The article explains that the problems that occupy the staff at the hospital (from the CEO to the union representative) are not communicated to the general board members representing the main board. Lack of information/knowledge flows between the members of the two boards is indicated. Conflicts at a level becoming viewable in the medias seemed to be based on different information of the situation and lack of communication
20th May 2011	"Verdens Gang"	Emergency Capacity - the employees are making protests	Union representatives: Capacity is not what it should be - lack of staff, CEO: This co-localisation of the emergency services secure a higher quality in the health services, but no board members do not response)	The information/knowledge from the employees and the one from the TMT differ. Their "facts" based on information are different and are interpreted differently, too. These disagreements are not observable at the board meetings
30th May 2011	"Dagbladet"	The hospital board members declare cuts of costs	The board members in the local board elected by the main board vote this decision through. The union representatives claim that this is not defensible with a satisfactory patient care, while the other board members argue that the reorganisation had improved the working facilities	The knowledge and information of actual numbers and cases are not mutual. The two groups are not sharing the same knowledge and information. This disagreement was just viewable as a note to the minutes by union representatives at the main board meeting.

			and opens for a reduction of staff.	
6 th June 2010	"Verdens Gang"	Ceo at the University hospital quits	The CEO at XX hospital supports the employees in their view that a justifiable service is not available within the economic limited conditions with the consequences that she leaves.	This CEO was present at the meeting in the main board few weeks earlier without communication this problem in the meeting. No members from the main board made any questions on these problems. The exchange of knowledge and information from the CEO at this hospital, and from the CEO in Healthy to the members of the main board, as well as from the main board directors to the CEO and to the local boards seem to be limited.
10th June 2011	"Verdens Gang"	The minister is criticized in the Parliament for her handling of the hospital situation.	Politicians from other parties claim that the situation is out of control and that patients might suffer.	The noise "on the floor" has moved to the Parliament. Unsolved problems with the patients are discussed in the Parliament. When the formal and correct channels for information fail, important cases are moved to the political arena.
8th Sept 2011	NTB	Serious failures in patient care are described in a fresh report	A fresh report shows that the patient in several areas do not get the care they should have got.	The directory of Health quality control criticises the situation. The CEO confirms her worries. At the board meeting a few days later unanimous board members leave the responsibility of these issues to the CEO. A strong trust on the CEO is thus signalled from all parties in the main board.
21st Sept 2011	NTB	The minister of Health Care in Norway arranges a meeting with the board.	The minister wants the board to reduce the number of employees and emphasises the gravity of the situation.	Remarkable that this communication of information is conducted via media. The CEO claims that the costs must be reduced, while the union representatives abet that no more reductions are possible without setting the patients in a critical situation. Serious lack of exchange of specific and general knowledge between the parties via internal meetings or via the general board meetings. The Minister called for the

		Subject: The University hospital uses about £ 100000 beyond the budget every day		meeting at 8 am the first day after she was back from abroad.
12th Oct 2011	NTB	Healthy has paid more than £ 40 Million to consultants during the last three years	The budget situation is critical. The hospitals are using far too much money every day. At the same time consultants are hired to describe, analyse and advice in the current situation.	The medias seem to be one of the most central information sources in the organisation. Exchange of general and specific knowledge and information via the medias is generally a serious sign of failure in communication
17th Oct 2011	NTB	Political initiatives on top level to remove the top management of Healthy	The chair of the Norwegian Conservatives and the chair of the Christian Democratic claim the CEO to leave due to lack of trust between the CEO and the employees.	The minister (from the Labours) defends the CEO, assuring that improvements will be initiated. A broad lack of trust from the employees (all different groups of health care personal) to the CEO, but at the board meetings a solid trust to the CEO is announced directly as well as via the decisions they make - from the union representatives as well. Seems to be a lack of knowledge and information flow from and to the main union representatives to the employees or a reluctant attitude to conflicts.
20th Oct 2011	"Aftenposten"	A letter from a worried nurse	A recently appointed nurse writes a long letter to the newspaper describing the situation into the details - as "the patients are screaming in pain because the staffs have not got time to administer pain	The situation seems to be out of control from an administrative point of view. The letter was published on the same day as a board meeting was arranged. On the agenda a case presenting the actual situation in some of the hospitals. Despite the public attention, a unanimous decision was made, expressing trust, though claiming that all aberrancies are followed up immediately.

			killers". "There is a lack of wheel chairs, so we have to use the toilet chairs instead".	
31st January 2012	NTB	7 out of 9 board members were told to leave the board. New members are entering.	This is a normal election, but an unexpected high amount of the members were replaced with other persons.	The problems related to the biggest hospitals require a change in the leadership regarding the Minister of Health. The probability is high that this activity was made to re-establish the trust between the members of the board and the employees as well as to initiate new and improved activities to improve the whole situation.

All the newspaper articles are available on request.

I further got the opportunity of being an observer at board meetings in the period from March 2010 till February 2012. The table below presents an overview of the meeting dates, the duration of the meetings, the locations and a brief description of the content of every meeting. Further, for the review, the number of items without consensus is counted.

Table 31: Summary of board meeting observations in Healthy

Date	Time *	Location	General observations	Consensus	Comments
4th March 2010	09.00 - 15.10	Meeting Centre, Oslo	The chair works for obtaining the consensus. If necessary, breaks in front of voting.	All items	Two long presentations by the staff - one on the budgets and one on the health care
9th June 2010	09.00 - 15.30	Meeting Centre, Oslo	Despite several long and complex cases, consensus is still present, but the union representatives had a hard time to accept in one case since the consequences for the employees were not too clear. In the end it was agreed upon a request for a report of future consequences.	All items	Two of the union representatives claimed a note on one of the items to "explain" their agreement. Two long presentations by the staff - one on patient safety and one on medical knowledge development and practice.
4th Nov 2010	09.00 - 16.30	Meeting Centre, Oslo	During a long meeting the discussions were short and limited and long quotes including until 10 different points were quickly agreed upon and approved.	All items	One presentation by the staff on the further development of the organisation as a whole.
16th Dec 2010	09.00 - 16.05	Meeting Centre, Oslo	In one the cases - regarding cancer treatment - the union	All items, but one	One presentation by the staff on a new national plan of health care

			representatives disagreed on one out of 13 points in the decision.		
17th Febr 2011	09.00 - 13.10	Meeting Centre, Oslo	A short meeting without any obvious discussion or information exchanges.	All items	Two presentations by staff - one on part time work and another on reputation and communication
17th Mar 2011	09.00 - 13.25	Hotel Norge, Brumundal	There was an informal meeting in the board at a hotel with a dinner and seminar on board evaluation and development the night before the ordinary meeting.	All items	A board evaluation , the strategic plan and future budgets were discussed in addition to the listed items.
16th June 2011	09.00 - 15.50	Meeting Centre, Oslo	In an item on the University Hospital the board members really disagreed. After some discussions they agreed upon the main points and left the written version of the details in the decision to the CEO, the board chair and one of the board directors while the rest of the board members left for a break. A long note in the decision saved a consensus on almost all points	All items, but one	The IKT strategy of the organisation was presented as well as a plan for specialist health care.
14th Sept	09.00 - 13.45	Meeting Centre, Hamar	There is a disagreement as well as differences in	All, but two	The experiences from the hospitals on the 22nd July (terror in

2011			information and knowledge on the situation regarding the largest hospitals. The union representatives disagreed and added their own notes and information in two cases on this subject.		Norway) were presented and discussed The CEO's way of working and results were reported and discussed.
20th Oct 2011	08.00 - 13.05	Voksenåsen hotel, Oslo	A meeting without any obvious disagreements or discussions. The board members were collected for a closed meeting with dinner and internal information exchange the night before.	All	The strategic plan - further development and investments in the specialist health were presented by members of the staff.
17th Nov 2011	09.00 - 15.30	Meeting Centre, Oslo	The budget and general plans for 2012 were approved without discussion or general questions	All	The strategy plan, the expectations of the CEO and a follow up of the board evaluations were presented.
20th Dec 2011	Absent				
16 Febr 2012	09.00 - 15.05	Meeting Centre, Oslo	Most of the general board members had their first meeting with a board seminar the night before. The exchange of information and the level of communication were different. A more tune and debate was obvious, and	All	The strategy plan and the project on reduction of part time work were presented.

			communication between union representatives and ordinary board members was active during the meeting.		
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* Usually I had to leave the meeting an hour or more earlier, since the chair of the board closed the meetings for special cases in the end of each meeting

The interviews formed the third part of the data. I conducted six of them, meeting the board chair, the CEO, two board members, one union representative and one representative from the users. A summary of the interviews is provided in this table:

Table 32: The interviews - details

Interview Object number	Board Role	Date	Location	Time started	Time ended
1	Board member	3rd Aug 2011	Interviewee's office	12.00	13.00
2	Board member	27th Sept 2011	IKEA - the restaurant, Oslo	14.00	15.15
3	Union representative	19th Sept 2011	Interviewee's office	11.00	12.00
4	Users' representative	16th Oct 2011	Comfort hotel, Skien - reception	18.00	19.25
5	Board chair	21st Oct 2011	Interviewee's office	13.00	14.00
6	CEO	21st Nov 2011	Interviewee's office	12.00	13.05

4.4.3 The impressions of Healthy from an outsider's point of view

When focusing on the website contents from outside, Healthy appears as a solid, well working company with an excellent structure in strategic documents, decision-making and plans. When listening to the board members at the meetings, the information exchange, the chair's management, the discussions and the atmosphere all work well. The presentations are well prepared and presented with seriousness, responded by adequate follow-up questions. As reviewed in table 30, the picture drawn by the media is totally different. Lack of control, disagreements between the general board members and the union representatives and

employees who struggle to take care of the patients in a proper way due to lack of money. This is described in media. We further read about waiting patients dying before surgery, many corridor patients, and discontent with the decisions in the main board from the members of the local boards. Further, a loud general message from outer units that they lack information and are not heard by the main board members, is reported (Newspapers articles, 2010, 2011).

When I started my interviews, I therefore expected a collection of divergent views. I assumed there would be different descriptions of the division of labour, the decision-making systems and the good and bad sides of the knowledge and information flows between the different levels of the organisation. Further, I was prepared to listen to descriptions of improper division of responsibilities between board members and executive management as well as between the members of the main board, the management and the members of the local boards. It could further be expected that the individual opinions on board task performance and the board processes would differ essentially. However, the impression I got during the interviews was not like that at all. Before more details are reported, I will discuss the order of the analysis and some special categories of importance for the analysis.

4.5 The case study

4.5.1 Board task performance, value creation and learning processes - a categorisation

The first question is how to categorise the value creation in this case study, and how to relate value creation to board tasks. Further, the learning processes need to be categorised.

Board task performance is about the quality of the decisions made by the board (Forbes & Milliken, 1999; Huse, 2007). In this context the information of the board task performance is delivered by the board members themselves, but also by the users, the media and the union representatives on behalf of the employees. The source is thus wider and more comprehensive than the one I utilised in the quantitative analysis. Based on the literature, it is known that a

strong board task performance is positively related to a high value creation (Huse, 2005, 2007). This fact opens for the opportunity of assessing the output values by observing the value creation in Healthy and vice versa. I will therefore start with a collection of the available statements on board task performance and value creation in Healthy. Based on the observations of value creation and board tasks, I will search for explanations by an analysis of presence of knowledge and skills and learning processes to evaluate the role of absorptive capacity in Healthy.

Further, based on previous research on the learning processes, no process should be analysed on its own (Zahra & George, 2002; Lane et al, 2006). When analysing Healthy, it appears that what is a contribution to transformative learning from the board members to one or more of the other groups, will easily be characterised as exploratory or exploitative learning for the persons or group who receive this new knowledge or information. This transformation of learning processes will actually be independent from where the learning process starts. Therefore, when analysing the interviews, the categorisation of learning processes will on several occasions depend on who is talking about the process. With this reasoning in mind, I will start by analysing board activities and board processes in Healthy.

4.5.2 Observations on value creation and board task performance

Which perceptions are present when discussing the board task performance? Based on meeting observations, the typical board meeting in Healthy is characterised by long written presentations of every item on the agenda and short or no discussions between the board members. If there is a disagreement, most of the board members seek to attain consensus rather than exploring the sources of disagreement. At all board meetings members of staff give a presentation based on one or several actual issues or processes in the company.

When reading the minutes from the meetings, the same solid and proper approach is present. There is a clear straight line from the strategic decisions in the board to the concrete presentations and voting on items, almost without exceptions. (Source: Minutes from Healthy's board meetings, 2010-2012, table 15, p.178-181). Further, there is an almost sensational rate of items with a consensus among the board members as reviewed in table 31 and observed at the meetings.

From outside, the board members might seem to be passive with a main focus of control. The CEO explains the situation in this way:

“There is something about phases, because a lot of the board members express that they would like to go back to the time when we constructed the reorganisation programme, because then they were very active. Then there was a creative process, and then there was a lot disagreement, too, but then we made it the way that we had many seminars as mentioned, and then we worked through it, didn't we? And when we ended up with the final decision, I believe we had used 30 seconds, but this was because everything had been discussed, right? In a way they had actually been allowed to contribute in all the processes. And it is obvious, when a programme is made and they have decided what to do, then the board moves to a totally different role, in a way they become more controllers. They want to be sure that the activities we initiate actually bring the organisation to the goal. This is a less creative process, most experiences, compared with the process to find the way and the goal. And they have struggled with this. Especially last year when they were almost a bit depressed: What have we got to do now? How can we contribute?” (CEO, Healthy)

Regarding the CEO this lack of activity from the board directors might be due to prior processes. She argues that the board discussions are limited because the same questions and issues have been clarified in prior strategic processes.

The chair supports this point of view by expressing:

"what is a limitation in this system compared with other systems, or board, or other boards when they are really on their best, is that the combination of the number of persons and openness at open meetings, make that in a way the dialogical development in the board is harder to make than it is in a smaller board. But, inside these frames, then I actually think that I have made this better than, yes pretty well, actually." (Board chair)

From the chair's point of view the board members work well. She further highlights the high number of board members and the open meetings as explanations why there is not more discussion at the meetings. She does not go into details regarding services or the concrete situation at the hospitals, but she underlines the importance of the members' role in the parent board and the way of working in this board:

"In a way you will all the time have to look after staying in the discussion and not just jump directly into the reality, either you are pro or contra."

The arguments here support the strategic and hierarchical control task of the board. Instead of taking immediate decisions on changes, they make a high-level decision, leaving the concrete solutions to the management and the local boards. Typically, principal decisions are made with the aim of trying to sort out a common comprehension of the situation. The philosophy is further based on a strong and comprehensive delegation of operational responsibility to the CEO, her staff and the underlying health companies. The board members will thus, according to the CEO and the chair, mainly govern by strategic plans and decisions, which should be a well-accepted governance structure for an organisation of Healthy's size.

However, the representatives for the users and the union representative provide a different perspective:

"We will never move forward if we are going to let things be as they are. There has to be a will for alterations, and this will for alterations is not there....: There is not any co ownership. .. from time to time they are opening the envelope when they arrive at the meeting, and that is their sort of preparation." (Users' representative)

"I think that they simply do not take into consideration how many different aspects which are related to the operation of hospitals, which means, how many different groups of employees are present, how many persons are taking care of the patient treatment? About the full dynamic in a professional circle, this has to be right. The aspect related to grief, which means loss, how overwhelming and how unsafe you might be in such a situation" (Users' representative)

"The patients are not sufficiently mobilised from the beds, the patients do not receive an adequate follow up of feeding observations, reports have been returned about failing cleaning, care, wrong medications, patients who need help do not reach the

toilet in time, the bells are not responded, lacking care of mouths, lacking change of napkins, patients cannot be followed to the toilets, medications are given too late, inadequate care of wounds, the patents are not sufficient observed, serious conditions might developed before they are discovered, patients and their relatives do not get sufficient information, patients who need a talk do are not offered a such one. This is a long list. Fundamental nursing is suffering from lacking staff resources, and the consequences are obvious, later bedtimes, poor quality, reduced safety of patients and risk of mistakes and complications. Eh, the employees have got symptoms of stress."
(Union representative)

These two groups of representatives highlight two other aspects - the real quality of the services as they perceive them to be (the value creation) and the board tasks - the level and degree of depth of the board items, and how the board members execute their tasks in the board. In their opinion the lack of quality is worrying, as are the value creation and the board task performance. Since these persons are represented in the same board, cooperating with the agenda and making consensus decisions, a natural question is if there is a lack of knowledge and/or information flows and transformation among the board members. The processes related to transformative learning are closely related to the exploitative one (Todorova & Durisin, 2007; Zahra & George, 2002), which could contribute in the explanation why the real service delivery of this regional health company actually suffers. The gap between the ways the different members actually seem to perceive the board tasks, and their statements could be a sign of the shortness of learning processes and information flows. Further, they typically do not share the same opinions, which can be a symptom of lacking transformative learning among the board members.

The two other board members express views which could be placed in between these two polar opposite groups when considering the board task performance:

".. we are on a high level, and we are not meant to go down and route details in the treatment of patients..

Well, we have massive critique in the newspapers from union representatives, from employees, but we have not seen anyone in a way. Well, if there were grotesque

examples of direct consequences of what is going on at the moment, then we would have seen this as well in the newspapers, and we have not.

I do not know why things do not work, but the health sector is hard to steer "
(board member 2).

And the other board member expresses:

"This is further the tool for the Health department (in the government) to govern the health companies in the area. And put it that way, then our most important issue - that will be to organise the operations in such way and allot the tasks in this context that we are able to get as much health and safeness from the money we receive. ..We will have to do both strategic choices and board decisions, but we also have to trust our management that the ways we create tries to obtain this goal"
(board member 1)

Obviously, the interviewees do not agree completely on this point. The overall impression is however, that the board members obviously observe the benefits of the strategic thinking and governance. At the same time, most of them have a perception that the actual board tasks and value creation conducted by Healthy do not meet the expectations and the needs from the stakeholders they are serving. However, they relate differently to this. It also seems that the control task is not properly performed, even if this is the task the CEO characterises as the most important in the current situation.

This failure might be due to missing knowledge or information flows in the whole organisation as well as missing information among the board members in the main board of specific challenges in the local health companies. On the other hand, it appears that the actors seem to explore the necessary knowledge and obtain all information they need for changes and improvements. The missing point might thus be willingness or competence of how to utilise the information. This will be further investigated below. First, I will find out how the third data source, media, describe the actual task performance and value creation.

As a first conclusion, failures in Healthy's value creation and board task performance are detected and confirmed by some of the interviewees.

4.5.3 Value creation and board task performance as presented in the media

During 2011 a considerable amount of almost equal articles were written by media. The ones reviewed here are selected to describe a general trend which was represented in most of the newspapers.

Aftenposten, one of the largest and oldest newspapers in the capitol, reported in September 2011:

"A fresh report from Healthy shows that the hospitals in a number of cities do not have no control that the patients receive the help they need in time. The public Health Authority states that this is a mistake that can make people die. The most serious violations lead to the fact that patients are not treated in time, that they "disappear" in the system or they are not called in for controls and they do not get any information. This is very serious, and it is a failure which can make people die. We know that this has happened, director L.H. says... The report points out that the main cause of these big failures is that the leadership anchoring in the hospitals as an average is too weak. Healthy does not know how many patients who might have been affected by the failures" (Aftenposten, 8th September 2011)

The main issue reported in this article is about internal information flows in Healthy and information flows between the hospitals and the patients. Failures of patient treatments, which are an important part of the value creation in the company, are further revealed. In this article another perspective on board task performance and value creation in Healthy is thus focused.

Activation triggers

Generally, media might play a role as activation triggers in this context. In the absorptive capacity approach the concept "activation triggers" is described (Todorova & Durisini, 2007; Zahra & George, 2002). The role of the triggers is to focus on issues and facts of importance for the company to initiate actions. This article is an example thereof. Based on this report in Aftenposten, an analysis and follow up process by the internal audit in Healthy was initiated. As a consequence, a renewed system for waiting lists was introduced later in autumn. This focus from media thus contributed to observable exploratory and in turn exploitative learning

in the company regarding the failures. The media played a role as activations triggers in the system. Similarly, reports from media related to the reorganisation projects resulted in increased activity and internal and external explanations.

Lack of confidence

The next example comes from an article two weeks later:

"The confidence between the executive management in Healthy and the employees at the University hospital is so poor that the leaders of the Conservatives and the Christian Democratic Party ask the Health Minister to intervene. ... The employees at the hospital state that the largest reorganisation process ever in the health sector is conducted in a way which affects the patients. It's obvious that things have worked out in a totally wrong direction. This kind of reorganisations claims an existing confidence between the employees and the top management. We will state that the Health Minister is the responsible one to consider if the sitting top management and the current leadership are the right ones, and if there is any possibility of rebuilding the confidence to bring the reorganisation back on track, Solberg (conservative) says to the Norwegian main television channel...

(NTB (Norwegian Telegram Bureau), 21st September 2011).

This discussion continued during the autumn and winter, and when the nomination of board members for the coming two years started in January, only one of eight board members appointed by the Minister was re-nominated. However, the Minister denied in interviews on the television that the exchange of board members was due to previous problems. Anyway, the result was that all board members, but one, left the board during January 2012. Even if the board members were not directly fired, a re-nominations of members, which is normal election routine, was replaced by new elections. A discontent with board task performance might be the reason, and The NTB (the Norwegian Telegram Bureau – Press Release) was another activation trigger in this period.

An interesting question is if this story would have been different with a better working absorptive capacity process in the board and among the top management. It is hard to know,

but as a whole, information and knowledge of failing activities is fundamental to have problems solved and improved, and systems to be developed.

The last one of the three scraps from media will be a slightly different one. This is an article presented in VG (one of the biggest tabloids), written by a recently hired nurse at one of the biggest hospitals. He explains how his life as an employee is in this system and shares his thoughts and worries with the readers:

"...patients who have to ask for pain killers time after time, not because they need more all the time, but because they never got it in the first instance, and because there is no one having time to help them. Patients who are lying with pain they characterise as the worse thinkable, because the management has not been training the employees well enough. There the idea actually has been that we are going to save money.

Relatives who wonder if their old parents are about to pass away, but they do not get the opportunity of speaking with a nurse because no one has got the time. They are busy delivering medications to their other patients, more than an hour too late.

Regarding the management there are no openings for more nurses in the budget. We have to sort out things with the staff we have got. Who are they to make these decisions, these one who never look at a patient's room, these one who never relieve pain or listen to the relatives' worries? I have gone to school for three years focusing on the consideration of the patients' need for care. Nevertheless, I and my colleagues are not the ones to decide which patients who need a continuous care - our management does, based on poor bureaucratic facts based on the purse".
(VG 20th October 2011).

For all actors in the health sector, choices, selections and service quality are sensible. Every single reader will easily relate these issues to their own health and to the well-being of their families, as even the CEO comments in her interview:

"this is a sort of rhetoric which makes my own mother in law wondering if she will have a good treatment if she is sent to one of the hospitals in the capital" (CEO in her interview).

Still, these stories would not have been repeatedly reported if the real world in the hospitals were different. Despite the reports in media, or maybe because of, the board members express that they do not go into debates in the media (documented in the interviews).

Lack of communication

Possibly, an improved communication between the employee level and the board members could have changed and improved the situation. This argument does not imply that board members should visit hospitals to get their information. In a company of this size, such a system would never work. On the other hand, the scrap above underlines the need for a two ways communication, which moves us back to the information and knowledge flows. The chair comments this point in her interview by saying:

"in all concerns you will ideally want that you understood and saw more of each other and thus understood the reasons why they did that thing and they did that thing. Ehm, but this limits itself by the board members, since this is actual spare time activities, to say it that way, on both levels. So, I actually think that increasing the contact between the management in Healthy and the board and the management out there (local health companies), I think this practically works to the same degree as far as there is a frequent contact between the boards" (Chair).

In conclusion, similarities are found between the descriptions made by some of interviewees and the media in respect of board task performance and value creation. Failures in value creation and board task performance are confirmed and strengthened by evidence presented in media. At the same time there is a gap between the failures and lack of safety described by the media and how these issues are recognised by some of the board members. It is still a question whether this gap is due to a lack of information and knowledge among the board members. However, the board as a group is in a more passive phase as stated by the CEO, and the lack of initiative might also be due to the board members' perception of their role.

By analysing the interviewees' contributions on knowledge and skills and the learning processes, further explanations why and how board task performance fails might appear.

4.5.4 Presence of knowledge and skills in Healthy

Generally, the board members have got a reasonable amount of common knowledge and skills. They have further, partly from previous activities, partly by board education developed

general firm specific knowledge. When analysing the interviews, most of the interviewees state that there is a difference between available knowledge and information among the board members, and what is actually utilised, as told by the users' representative:

"I think we have enough information and details, but I do not think they dare to implement the activities which are needed." (Users' representative)

His opinion is that the lack of activities is not due to missing information or knowledge, but to the lack of initiative and courage to do what has to be done. The failure might thus be more linked to shortage of implementation, which might be related to transformative and exploitative learning (Lane et al, 2005; Todorova & Durisin, 2007), or as described in Zahra and George's model: The potential absorptive capacity is not realised (Zahra & George, 2002). Even if the board members are informed that alterations should have been initiated and implemented, they do not activate the necessary processes. A lack of courage can therefore be related to the general aim for consensus or lack of initiative.

The union representative explains, however, the problematic situation caused by shortage of knowledge and information exchange:

"No one listens to us, no one understands what we mean, isn't it so? The message stops somewhere in one or another corridor, somewhere in this system,"

and she further explains:

"because we have a flow of information horizontally, while we are all working vertically, and then we need to be lucky if we succeed in touching the axes from time to time, and from experience we know that this is a point where we all struggle." (union representative)

Regarding the union representative there is thus a shortage of necessary information and knowledge in the board to actively follow up the issues between the board members and the employees. Her explanation is interesting. This is the first time somebody comments that the knowledge and information flows are not moving through the right channels and to the right persons. Based on this explanation, the absorptive capacity issue does not seem to be related

to the available amount of knowledge and information, but to the information channels or lack of these.

This observation is similar to what Lane et al (2006) describe as "characteristics on firm's structures and processes", which they define as a moderating effect to the absorptive capacity in firms. In the context of Healthy, the properties of the information flows between the board and the rest of the organisation seems to be moderated by the structures that implement the information and knowledge flow (Lane et al, 2006). The concept "power relationship" as introduced in corporate governance research by Pfeffer (1981) and proposed by Todorova and Durisin (2007) in absorptive capacity context, can explain the loss of information "along the way". Todorova and Durisin (2007) argued that whether and to which degree the new knowledge is absorbed and exploited in the organisation depends on the "power relationship". The data from the interviews indicate that some of the information which arrives at the board or is sent from the board is filtered through power relationships, or as summarised by one of the board members:

"There are always new complicated items. And lots of the persons sitting in the board have been there from the start, which makes you a bit careful in a way to put new thoughts forward" (board member 2).

The CEO further confirms the impression that the amount of information is enormous and should obviously be sufficient for the board members:

"Yes, they (the board) get very much information, I think the fact is that most members are pretty up to date on what is the actual situation at any time, and I try in addition to explain what is happening in the meetings, it is often so that we answer questions - that is to the Minister in connection with the question period questions or hearings and stuff, and then I send the board members information between meetings as well, and I comment also if there is a big debate in the newspaper and we have been interviewed, I'll send out my answers so that they have them at the same time as they read the newspaper, so they can see the whole picture, because often the information does not get out properly.

Then we have both monthly feedbacks on the economy, but also on all sorts, that what we have of quality indicators, that is what we focus on, waiting lists and everything

here. Also we have the four-month period in which we follow what we have with indicators. We have the research, i.e. so we are using every possibility to communicate the information we have got" (CEO).

If the amount of information is satisfactory, the failure of information flows might further be explained by "knowledge complementarity" as introduced by Zahra and George (2002). The knowledge and information which are important for the board members might represent a low degree of complementarity with existing knowledge and with the information the board members actually need. The result will in case be a limited absorption of new knowledge. Further, other information flows of less importance can disturb the on-going absorptive capacity processes, initiated by the exploratory learning among the board members (Lane et al, 2006). As expressed by the union representative, there is a need for relevant information:

"This is an organisation in need for help. There is surely competence, which could be used, - how we have to secure the communication to the degree of that we get adequate information in return, which means realistic information"
(union representative).

In consequence, based on the interviews, general knowledge is available and is mainly well divided among the board members, but the use of knowledge seems to vary. This might be due to lack of information and knowledge flows, lack of knowledge complementarity or power relationships. Based on these observations, the next step will be to investigate whether the absorptive capacity processes can contribute to the explanation of Healthy's issues.

4.5.5 Absorptive capacity in Healthy

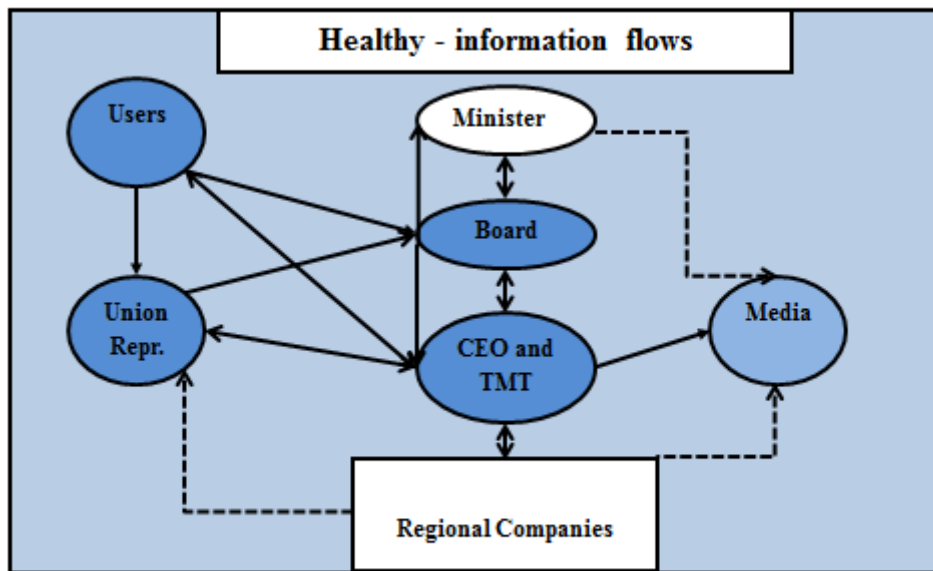
This section is mainly based on the interviews, because absorptive capacity processes are not commented in media, and the meeting observations to a limited degree cover the subject. I will therefore work through the interviews investigating how the interviewees emphasise the learning processes and cross-check with other data when they are available. I will start with a description of the exploratory learning.

4.5.5.1 Exploratory learning in Healthy

How do the representatives from Healthy explore new and existing (but for them unknown) knowledge and skills? To answer this question, we need to know which internal knowledge sources the board members have to conduct the exploratory learning process, and finally, which information is of real importance to the board members. This company belongs to a sector where the customers are sensitive to the quality of their services and where people might die due to failures in health services. A general question is therefore whether the board members and the executive management should know "everything" about issues related to the on-going service provision. As discussed earlier, the opinions on this question differ between the interviewees. The users' and the union representatives consider thorough information of all actual items, or possible future items, to the board members as the correct procedure. The other board members argue that unless actions are to be initiated towards the on-going items, there is no reason for the executive management to describe all details to the board.

Based on the interviews, the communication lines in Healthy are illustrated in the figure below, which might indicate the appropriate sources and recipients of knowledge and information for the board members:

Figure 7: Information flows in Healthy



Most of the lines go both ways. The solid lines show the most employed connections, while the dotted lines represent rarer connections. The bottleneck in this chart is obviously the CEO with her TMT and the management group. Only minor amounts of information move outside this "information and knowledge centre".

On their own, these flows of information in the organisation might be well working, but such a model will depend on the capability and ability of the top management group. Essential information should be forwarded and other information should be sorted out at this level. The interviewees touch upon these issues a number of times. First, to make correct decisions the board members are dependent on a well working source of knowledge and information from the local boards and managers. They further need a continuous update from the CEO about all activities within her remit. The employees, represented by the union representatives and the users are able to give and receive updates which might be overlooked elsewhere, because they are of special interest to exactly these groups. These information and knowledge flows represent the main source of the exploratory learning by the board members. Even if the board

members themselves are active on exploratory learning inside and outside Healthy, the extent of this learning process will also depend on the choices the CEO makes regarding information flows. For board members who are not too active on their own with regard to exploratory learning, the CEO will be even more important. The users' representative reports that he is not satisfied with the amount and the content of the current information:

"I think the board receives too less information of the challenges existing in the companies outside, or in Healthy in general" (Users' representative).

However, most of the board members are updated by informal information from their private connections, from persons they know from work or elected positions.

"My most important sources are actually in a way the presentations in the board items, but of course as a board, then we also follow various media with interest, reading reports which are written in the various media, at the same time as we also have got a certain contact, or we receive some input from persons working inside the hospital system in underlying health companies, so informal, it is clear that this creates the backdrop for what we think " (Board member 1).

From the literature we know that for exploratory learning the availability of knowledge and skills is essential (Cohen & Levinthal, 1989, 1990; Zahra & George, 2002), which is also confirmed by the regression analysis in the quantitative part of this thesis (the values of the standardised betas are high between exploratory learning and presence of knowledge and skills). The knowledge and information flows are thus an important prerequisite for the exploratory learning and for absorptive capacity as whole. In her interview the CEO also focuses on another issue related to knowledge and information flows:

"they (the board members) have actually asked for it and have got a lot of information, and then you can say that this information you will have to part in two, because the one is what is based on facts on the table, which they may look at, and from which they can have as much as they want. But what they often want, is actually my assessment of the way the leadership works, which is demanding since this is an open meeting, true?" (CEO)

In these statements she touches on another question which is related to confidentiality. With open board meetings, sensitive information will be limited. The chair mentioned the open meetings in her interview, but none of the other interviewees mentioned this. Anyway, open meetings with media present will not make the information flows during the meetings easier.

In conclusion, data related to the exploratory learning processes within Healthy indicate that the exploratory learning process seems to be limited by lack of information and knowledge flows and by the selection of information and knowledge made by the CEO and her team. Furthermore, it seems to be a mismatch between the nature of existing information and information which could actually be of importance to the board members. Even if exploratory learning is partly about board members' own responsibility of seeking new information and knowledge, board members in a big organisation such as Healthy will always be dependent on fundamental information flows from the CEO and the top management team.

4.5.5.2 Transformative and exploitative learning in Healthy

Based on the models developed by Zahra and George (2002) and Todorova and Durisin (2007), I will discuss the transformative and the exploitative learning together. There might be a need to distinguish to which degree the board members secure transformative learning and to which degree these members exploit the existing knowledge and information. However, because transformative and exploitative learning seem to "circle" for a while until final decisions are made (Todorova & Durisin, 2007; Volberda et al, 2010), and because transformative learning in one part of the company further may work as exploitative learning in another part, a simultaneous analysis of transformative and exploitative learning fits better.

Transformative learning at a group level is about sharing and exchange of knowledge and information "to link new knowledge to existing knowledge to be used in new ways" (Lane et al, 2006, p.855). As developed in the measurement for the quantitative analysis, active board

members who are familiar with each other's competence, have an impact on transformative learning. A co-ownership of knowledge should thus be present. Based on the interviews, this co-ownership seems to be missing in Healthy:

"There is absolutely not any co ownership" (Users' representative)

"I don't experience that the focus on the internal solidarity is strong in the board. I will rather say that this focus is stronger outside," (Union representative).

"Much frustration and this is not creating the common foundation attitudes or the common understanding you need to have to make a cooperation work. Too many fronts are built up" (Union representative).

This lack of co-ownership and team feeling will have an influence on the transformative learning. Previous research has suggested that the social and human part of board activities is related to the quality of board task performance (Huse 2007; 2009).

With the semi-structured interview method there are openings for the interviewees to underline and put forward what they perceive as the most important elements when describing the attitudes of Healthy's board. An interesting feature of the interview data is that none of the interviewees have mentioned this social aspect of the board activities. Since new board members are educated before they enter the board meetings, there are therefore reasons to believe that this social aspect has not been central in the board's education.

From the literature review of absorptive capacity we further know that the social integration mechanism moderates the effect of the absorptive capacity process (Todorova & Durisin, 2007; Zahra & George, 2002), and the "characteristics of the firm's mental models" has a similar influence on the learning processes (Lane et al, 2005). Since transformative learning at the board level is about sharing and exchanging knowledge, the social aspect can be of special importance for this learning process. Simultaneously, a lack of team attitude in the board will hinder transformative learning. These points may give an explanation why this process does not work better.

However, transformative learning may be further explained by other data. When describing the board meetings based on my observations, I concluded that the degree of consensus in the decision-making was very high. The consensus practice in the board is confirmed by several interviewees:

"I think, perhaps, that the chairman was almost too keen to find a compromise compared to just let it be a contradiction," (Board member 1 - about the first chair).

" as we're concerned, unless there is a real contradiction, we are committed to consensus meetings" (Board member 2)

Regarding consensus the union representatives summarised:

We are doing better by having a controversial decision than a note to the minutes, because a note to the minutes will never be more than an opinion there and then" (Union representative).

At the same time she admits:

" I don't think that we as a board, are as active as we should have been, to secure that things happen in the units below. In a way they just accept that yes, they look at this as intelligence or an orientation, and I am fed up by items just to have the information" (Union representative)

And from the next interviewee:

"They (the board members) use a lot of time to agree. And I think it might be, be a bit wrong to show that they agree so much, too. Because with the health system we have got, the way it is built, and a lot of reports in the media like what it is, so I cannot understand that they all agree (Users' representative).

The interviewees here describe transformative processes in the board meetings, which are conducted to find a consensus. During these learning processes the board members share knowledge and information before the decisions are made. However, the board has also been characterised as passive with limited discussions and quick decision-making, which might indicate lack of transformative learning. A possible explanation may be that these discussions preceding a consensus are not evident at board meetings:

"We do not know how the conflicts are solved internally, because this does not happen in the public board meeting. ..then the users are not present". (Users' representative).

The users' representative explains that some of the learning processes take place when the meetings are "closed". Further, the chair presents another explanation in her interview, telling that procedures preceding decision-making with consensus (to make "the forest of people" satisfied) include exchange of knowledge and information between board members (in strategy processes). Communication between the main board, the CEO and the local boards prior to board meetings are also conducted, in order to find suggestions which might be commonly agreed upon. She concludes by saying:

"But this is about, when there is an agreement in the board, and then there is often, yes, a foundation much further out, too. So if you are just cutting the edge, when there is a forest of people being annoyed? And then it is often difficult to have it followed up, too» (Board chair).

Still, when consensus is almost a common goal on its own, the transformative learning process will be hindered by lack of discussions and new suggestion. The chair rejects this argument by saying:

"You think that the decisions have more power when they are unanimous - that was probably the most important. But it is probably also founded in, well, a personality trait that the decision process simply is becoming better. If we have agreed, and you have a genuine belief that going on discussing things makes us ending on something which,.. that if everyone agrees, then it is probably more correct, then it might be a better decision than what was first laid there" (Board chair).

"..But you would get someone voting against. And in case then you had got the whole geography there against it. So this was a kind of consideration, ..or what is clever? What is clever in the end to move as far as possible during the shortest time? It might be better taking care now, and then do this later on" (Board chair).

The argument here is split. First the chair claims that when the board members work together for a common agreement and decision, the decisions become better, which is related to board

task performance. Second, she argues that the decisions will be more strongly founded, which indicates a transformative learning process based on knowledge exchange.

This pedagogic and contextually determined description of the processes is probably well founded and experienced. We might have discovered a reason why the majority of the board members defend the consensus model: The transformative learning process in the organisation as a whole is conducted prior to the consensus processes as described by the chair. By the means of these discussions the board members aim to find a consensus, but at the same time they share knowledge. She further explains that by the consensus procedure, knowledge is shared between the different levels of the organisation. To the degree that the decisions in the board are executed in the local companies, their exploitative learning will there be affected, as well. This explanation from the chair actually contributes to another perspective on absorptive capacity processes in the board. When the whole organisation is analysed, the consensus practice in the main board might also open for an improved absorptive capacity process in the subsidiaries of Healthy. Whether this can be confirmed or not, will be outside this thesis since the data do not cover any interviews or observations from the local health companies.

Transformative and exploitative learning processes might, however, be observable in the local companies related to decision-making in the main board. Further, exploitative learning is present in the main board when decisions are made and new knowledge thereby employed. However, based on observations from the board meetings, the trend has been that new and often controversial projects have been delayed or postponed due to lack of consensus while the more ordinary activities are agreed upon and initiated. In consequence, the exploitative learning in the main board will be present, but reduced.

Further, the transformative learning process will often be on-going together with the exploitative learning and thus in the next instance be a process outcome from an exchange of knowledge (Lane et al, 2005; Todorova & Durisin, 2007). In turn, the transformative learning

related to follow-ups will thus be reduced due to less comprehensive decisions, which next time will reduce the exploitative learning. What is here observed reminds me of negative feedback-loops (Volberda et al, 2010) and can also be an indication of complementarities between the learning processes.

Finally, the consensus process seems to interfere with the absorptive capacity process, on the one hand by an improvement via an extended transformative learning, but on the other hand the same process tends to hinder further exploitative learning. Furthermore, as observed and stated by the interviewees, social integration mechanisms and co-ownership, or their absence, might play another role in these processes. Complementarities between the learning processes have been observed. With reduced exploratory learning, the amount of new knowledge will decrease, hindering the transformative learning, which further has an impact on the exploitative learning. Feedback-loops will then reduce the transformative learning.

The analysis so far shows that the CEO obviously plays an important role in Healthy. Her impact on the absorptive capacity processes is further discussed in the next section.

4.5.6 The CEO in Healthy

Figure 7 describes that almost every communication arrow is drawn towards or through the administrative unit, represented by the CEO and her staff. This characteristic of the organisation is highlighted by the interviewees when they express:

"The CEO presents and knows the stand and the opinions in the board of Healthy and the reason for our decisions. And her possibilities, based on the time consumption, yes, especially time consumption, and based on her working position, of conveying and having a dialogue with regard to these things, this is probably bigger and better than if you are to use direct meetings, board seminars and things like that "
(Union representative)

"...it has been a conscious choice in the way that I think that it in a way is more correct the CEO, who is there every single day, is the one who primarily is the extraverted one. And it is in these situations where there is, there is something being

put on the edge regarding the trust of the CEO, regarding, yes and so further, that the board and the board chair have to enter the arena" (Chair)

In her own words the chair explains why she has actually chosen to put the CEO forward as the public face of Healthy. This is about time commitment, but she further confirms that the choice is about positioning as well. In another sequence of the interview, she further underlines:

", and I mean it is right that it is the CEO who is the visible one" (Chair)

The chair presents her philosophy of leadership in this quote. In fact, the chair argues for a governance structure based on stewardship thinking when stating that the CEO's intentions are to act in accordance with the board members' will and strategy (Davis et al, 1997; Huse, 2007; Muth & Donaldson, 1998). The principles from stewardship theory further fit well with the observed board tasks in Healthy, representing general advice on strategies for the CEO to follow up. On the other hand, the CEO herself described the board's most important task to be control.

The next question will then be if the CEO in reality acts in accordance with the chair's intentions. The other interviewees confirm the CEO's position:

"..there is a very close cooperation between the CEO and the board chair, and from time to time it might be hard to see who is who." (Board member 1)

"Yes, we are listening to the CEO.....But originally I trust that what I get in my papers is correct, and that I am not mislead as a board member. I choose to do this, if not I could not be a member of the board. But there are of course openings for discussions, but about facts, I trust the CEO. About considerations, I trust myself." (Board member 2)

"..the management, is so strong, that it is hard for anyone else to make corrections, because you have not got enough time or possibilities of using your energies in a case like that...because the internal board chairs they have a clear mandate, they have to do as she (the CEO) says" (Union representative)

"The chair usually agrees with the CEO or the management, as a principle, I think". (Users' representative.)

All the other interviewees thus confirm the impression regarding the distribution of responsibility and work areas. Then, what about the CEO herself, does she support this impression?

"No, well, it is actually me having a lot of contact with the (local) board chairs, because, actually they report to me and not to the main board" (CEO).

"So we have both formal dialogues, and we have all the casual contact that occurs between Healthy and the local companies. And we have the standing boards of directors, i.e., CFO's, Directors. All directors also have the opportunity to exchange points on the items then... So there I feel that both the information one way and the other way is really very good" (CEO)

" here is much more (information) that I am sitting receiving fortnightly then, when we have follow-up meetings, and I have asked if they (i.e. the board members) are interested in having all these details, and it has in principle been refused" (CEO).

Based on the statements from the board members, the CEO could have been expected to be clearer in defining her own role. However, she never moved in that direction during her interview. Instead she mainly focused on Healthy's issues.

The information and knowledge flow descriptions with the CEO as the "main centre", and the statements from the board members, leave a picture that the governance of Healthy has several features in common with a company with an established CEO duality. Formally, CEO duality is forbidden in Norway for companies with a turnover higher than three million Norwegian Kroner (about £ 320,000), which means that this organisational model is not an option for the bigger companies in this country.

However, my earlier statement on similarity to a stewardship governance structure seems to fit well in since the stewardship theory defends CEO duality (Muth & Donaldson, 1998; Styles & Taylor, 2002), in contrast to i.e. agency theory where it is argued that CEO duality is inappropriate for board task performance because it compromises the monitoring and control of the CEO. My observations as well as the newspaper articles indicate, however, that the

control task does not work satisfactorily in Healthy's board, which also fits in with stewardship theory where the board control is toned down, arguing that CEO duality may be better for the performance, due to the unity of command it presents (Davis et al, 1997). Taken into account that the CEO herself expects the control task to be focused by the board members, there is a question what is left to the board in this company. Hence it is understandable that the board members seem to be passive. Altogether, the data sources confirm a common picture of an active and partly dominating CEO, who has the full support from the board chair.

4.5.7 Conclusions from the case study

The case study of Healthy opens various aspects and questions related to absorptive capacity and board task performance. First, the importance of the knowledge and information flows has been discussed and underlined by all the interviewees. Second, exploratory learning seems to be dependent on the information and knowledge flows. Further, the structure of the responsibility distribution between the top management team (CEO and her staff), the board members and the chair will have an impact on exploratory learning, since the chart of the information and knowledge flow shows that the CEO has a central position to secure that the different groups in the organisation are informed and updated with a proper amount of knowledge at the right time.

Third, the transformative learning seems to be limited, which might be explained by limited knowledge and available information flows, but feedback-loops related to consensus, are actually representing a limitation on its own reducing the learning processes over time. Without transformative learning, the exploitative learning will be hindered, which then limits future transformative learning (Volberda et al, 2010). Further, as described by Todorova and Durisin (2007), the transformative and exploitative processes will work simultaneously, and it might be hard to distinguish when one process ends and the next one starts up. Finally, the

complementarities between the learning processes as described by Zahra and George (2002), and underpinned in the quantitative part of the thesis, will normally contribute to a further strengthening of these limitations in the board, since the processes are affecting each other.

An interesting aspect arising from the analyses of Healthy is that a limited transformative learning in the main board might result in an improved absorptive capacity process in the local companies and their boards, opening for foundations of the decision-making in the outer part of the organisation. The extent of this effect is, however, not confirmed by the existing data.

A situation which has common characteristics with the CEO duality system appears when the CEO role in Healthy is analysed. The distribution of tasks between the chair and the CEO combined with the CEO's role in the information and knowledge flow system, define a comprehensive and all-encompassing CEO role. Still, none of the interviewees expresses critique towards the CEO for her task performance, which might confirm that the work she executes is of high quality. Stewardship governance thinking among the board members might be another explanation. This strong emphasis on the CEO's role in the chain has consequences for the board and the organisation, as analysed and discussed above.

In conclusion, the case study of Healthy has brought to light several aspects regarding absorptive capacity, knowledge and information flows and leadership structures in boards. The absorptive capacity approach thus represents a contribution by explaining learning processes in boards.

The main findings are summarised below:

1. As reported in section 4.5.2 and 4.5.3 the value creation is not satisfactory. The services of this company do not equal the goals in the strategy documents. Most stakeholders argue that there are serious deficiencies in value creation.

2. These problems were further observed related to board activities and board tasks. The directors of the board seem to be less active than in prior periods and more focused on control. Still, the control task was not fulfilled as documented by newspapers etc. The overall impression of Healthy's services and board activities further indicate that the other board tasks are partly absent, or not working. This is based on the evidence that sub- units do not work properly (related to service task), and that strategic decisions are not followed.
3. Presence of knowledge and skills is characterised by lack of information and a disturbance in information flows (see figure 7). General knowledge seems to be present among the board members, but more current updated information seems to be randomly available or not absorbed. Details were reported in section 4.5.4.
4. The CEO is directly and indirectly responsible for a number of decisions, which represents a leak from the board to the CEO, as described in section 4.5.6.
5. Activation triggers stimulate all three learning processes as reported in section 4.5.3.
6. Shortage of co-ownership, individual motivation and the norms in the board as a team, have an impact on board task performance.
7. About absorptive capacity:
 - Exploratory learning does not work due to lack of information flows and due to lack of initiative from the board members to act exploratory.
 - There is a transformative learning and the consensus philosophy strengthens this learning.
 - The exploitative learning is, however, hindered by consensus. When the board members do not agree, limited actions are initiated.
 - Due to the feedback loop (Todorova & Durisin, 2007; Volberda, 2010) the limited exploitative learning will consequently hinder the transformative learning.

- Due to complementarities between the learning processes, all the processes are eventually compromised.

The results will be further discussed in chapter V, where a modified and extended model will be derived. The findings will be compared with previous research and existing literature.

4.6 Results - summary

Two separate research projects and analyses have been conducted and reported. Even if the contexts differ and the methods are two different ones, similar research questions have been touched upon in both parts of this thesis. Even though new questions emerge, the results show that the concept of "absorptive capacity" in a board context has utility in explaining board task performance. The findings further confirm that the three learning processes, exploratory learning, transformative learning and exploitative learning and their complementary effects do play a role, and the absorptive capacity approach therefore contributes to new knowledge on board processes and board activities.

The results are further discussed and related to existing literature in the next chapter.

V. Discussions

5.1 Introduction

The results of the analyses were reported in the previous chapter. The relationship between presence of knowledge and skills and board task performance (control, service, strategy), is mediated by absorptive capacity. Further, the three dimensions of absorptive capacity: exploratory learning, transformative learning and exploitative learning were tested. Each learning process mediates board task performance, and complementarities are present, which means that the three learning processes are correlated and strengthen each other. Qualitative research was conducted, which augmented further antecedents and mediators/moderators. The results have several implications.

In this chapter, the findings will be discussed and contributions to knowledge and implications for existing theories will be analysed.

Chapter IV reported several findings:

1. The study confirms that “presence of knowledge and skills” has a positive impact on the three defined board tasks.
2. The study finds that “presence of knowledge and skills” is a greater predictor of board tasks than board attributes alone.
3. The study refined the previously defined board process ”use of knowledge and skills” by underpinning theoretically with an absorptive capacity approach, and it was confirmed that this process is a greater predictor of the board tasks compared with board attributes and presence of knowledge and skills. .
4. Three dimensions of absorptive capacity positively and significantly mediate the relation between presence of knowledge and skills and the three board tasks, control, service and strategy.

5. The study confirms that complementarities between the three learning processes exist with the result that the three learning processes together are a stronger mediator than a single process.
6. The qualitative analysis shows that information flows have an impact on absorptive capacity.
7. The qualitative analysis further shows that the role and power of the CEO and the division of labour between the CEO and the chair might have an impact on board task performance.
8. The qualitative analysis indicates that a comprehensive utilisation of consensus has an impact on transformative and exploitative learning.

These findings have implications for board practice and board policy, which will be further outlined. The chapter will be structured as follows. In section 5.2 the implications for theory of the results from the quantitative research will be discussed in detail. In section 5.3 the results from the qualitative research will be discussed, while section 5.4 will discuss implications for board practice. Finally, section 5.5 presents implications for corporate governance codes, while a summary is presented in section 5.6.

5.2 Discussions - the quantitative results

The results in the study extend the current knowledge of board processes. In general, the process “use of knowledge and skills” in boards conceptually extended and analysed by the absorptive capacity approach, sheds new light on the knowledge of board activities. First, the study shows that the presence of knowledge and skills and the board process variables are greater predictors of board task performance than board attributes, even if a small number of the control variables affect board task performance. Second, by examining absorptive capacity in the board context, the study provides further insight of the actual board process compared

with previous research, specifically by demonstrating the importance of use of knowledge and skills. Third, I find that absorptive capacity as a whole as well as represented by three predefined dimensions, mediate the relationship between the presence of knowledge and skills and the three defined board tasks, control, service and strategy.

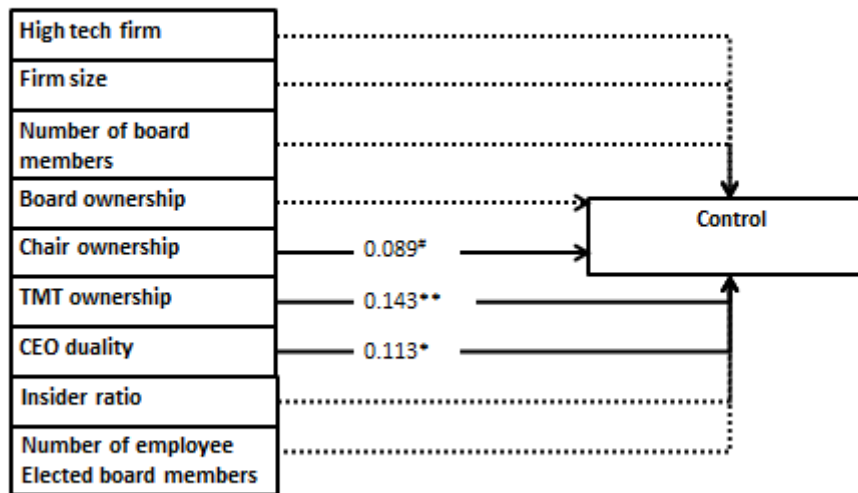
5.2.1 Board attributes

As described in the figures below, the regression analysis (model I) detected that some of the control variables have a significant impact on the dependent variables. Nine control variables were tested. In general, a significant relationship is confirmed for some variables, but the values of beta are not high.

Further, when testing, the effect of these control variables on the control task is limited. An adjusted R square on 0.08 and a significant F-value of 5.3 underpin the impression. These results are in accordance with prior research. The study thus confirms the arguments and findings from existing board research (Daily et al, 2003; Finkelstein & Mooney, 2003; Forbes & Milliken, 1999; Huse, 2007; Roberts et al, 2005).

Furthermore, three of the control variables showed a significant impact on the control task. Chair ownership, TMT-ownership and CEO duality were all positively and significantly related to control. Details are illustrated in figure 8 below:

Figure 8: Boards attributes and control



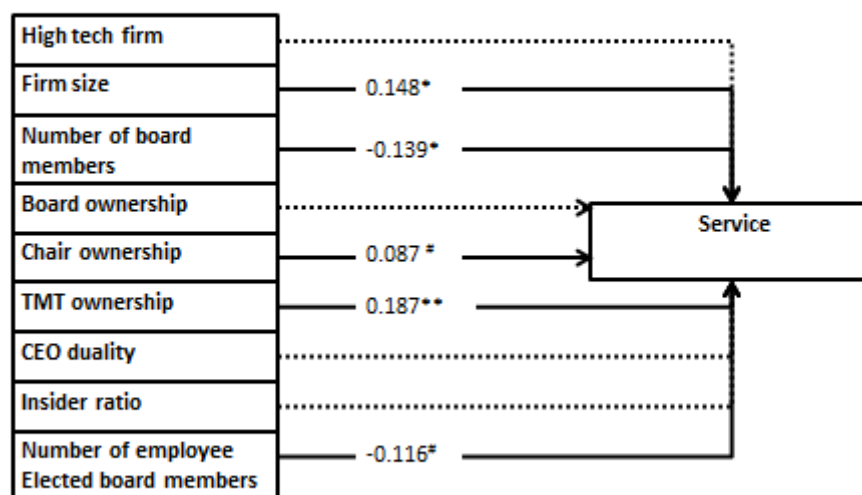
#: $p < 0.1$; *: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$

The control task has its origin in agency theory (Fama & Jensen, 1983; Jensen & Meckling, 1976), which also emphasises the need for separation of CEO and chair roles in addition to chair ownership by managers. As expected, the control variables on ownership are statistically significant in relation to the control task. However, the impact of CEO duality is positive, while agency theory argues for a separation of the roles (Dalton et al, 1998; Finkelstein & D'Aveni, 1994). These findings are thus more aligned with stewardship theory, where it is claimed that CEO duality may facilitate superior firm performance, (Dalton et al, 1998; Donaldson & Davies, 1991). As reviewed in section 2.3.4, prior findings in the literature are however mixed with regard to CEO duality.

When testing board attributes on the service task, I detected significant results for firm size, number of board members, chair ownership, TMT ownership and the number of employee elected board members. There is a negative relationship between the number of employee

elected board members and board size on this board task, while the three other variables show a positive impact. Details are presented in the figure below:

Figure 9: Board attributes and service



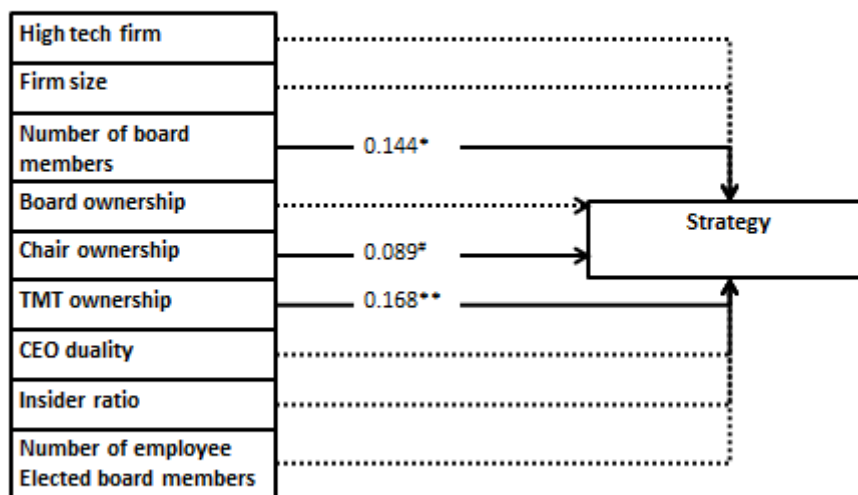
#: $p < 0.1$; *: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$

It might be remarkable that the value of TMT ownership is almost 0.2 and with the highest degree of significance. However, the findings still confirm that the “usual suspects” (Finkelstein & Mooney, 2003) do not explain the black box of boards. The adjusted R square is 0.09 with a significant F-value on 6.1, which are acceptable, but not very high (Hair et al, 2010). The service task is grounded in resource dependence theory and the resource based view of the firm (Hillmann & Dalziel, 2003; Pfeffer, 1972; Wernerfelt, 1984). In this theoretical approach, contributions by board members as advisers to the management are focused. Interestingly, control variables which represent factors of importance for these activities are the ones with significant values when the service task is tested. However, the variables “number of board members” and “employee elected board members” have a negative impact on board service performance. This result does not support the arguments

from stewardship and resource dependence theory that a higher number of board members are positive for advice and service, since more members represent more knowledge and information (Dalton et al, 1998; Johnson et al, 1996; Pfeffer 1972). As reviewed in section 2.3.3, a former study indicated an inverted u-shaped relationship between board size and corporate entrepreneurship (Zahra et al, 2000). An explanation could thus be that the actual number of board members in the study is close to an upper limit of what is desirable. The reported mean of board members in the study is 5.2 as shown in table 20.

Finally, for strategy three control variables came out with significant values. The number of board members, chair ownership and TMT ownership are all positively correlated with the strategy task as described below:

Figure 10: Board attributes and strategy



#: $p < 0.1$; *: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$

The strategy task finds its support within several board theories such as stewardship theory, agency theory and several behavioural approaches (Pugliese et al, 2009). For this task, ownership of shares and the number of board members seem to play a role, which fits in with

agency theory (ownership) (Jensen & Meckling, 1976) and with stewardship and resource dependence theory (number of board members) (Davies et al, 1997; Wernerfelt, 1984). This task has the lowest value of adjusted R square (0.02) and F-value (2.1), which does not make this model strong.

As discussed above, the results vary with tasks and between models. In general, even if a significant impact is present, the models are not very strong. As reported above, the adjusted R squares and F-values are not high, and the explanatory power of this model should be considered as limited (Field, 2009, Hair et al, 2010).

These results are in accordance with former research. Among several researchers Daily and Dalton (2003), Finkelstein and Mooney (2003) and Huse (2005) have all argued that “the usual suspects” do not provide full consistent support, and that the neglecting of board processes contributes to a limited explanation of board activities (Daily et al, 2003; Huse 2005; McNulty & Pettigrew 1999; Pye & Pettigrew, 2005). Further, the reliance on an agency theoretic approach traditionally placed the board control task above other board tasks such as service or strategy. The results in this study support other findings (Minichilli et al, 2012; Zattoni et al, 2012; Zona & Zattoni, 2007) stating significant results between board attributes and the service and strategy tasks. Even if the validity tests are not as strong for the strategy task, all three tasks were found to have significant relationships to some of the control variables.

5.2.2 Presence of knowledge and skills and board task performance

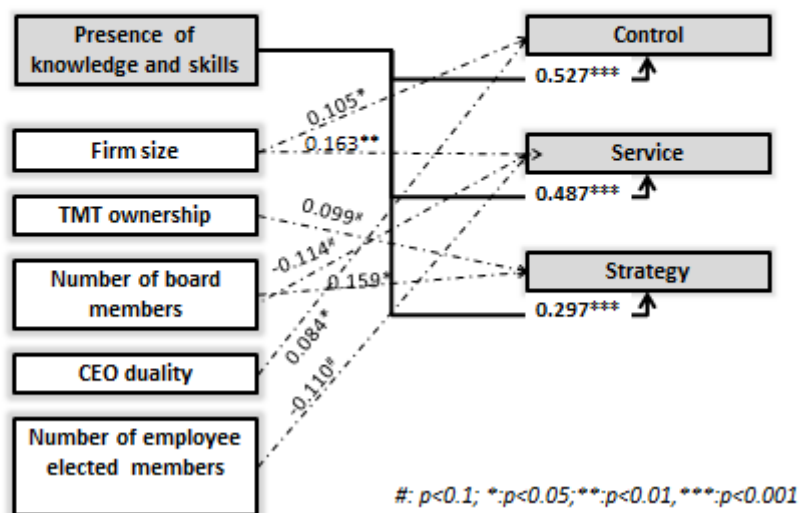
In board models a relationship between presence of knowledge and skills and board task performance is proposed (Forbes & Milliken, 1999) and empirically confirmed (Machold et al, 2011; Minichilli et al, 2009). Minichilli et al (2009) included “presence of knowledge and skills” in the variable “board members background diversity” when analysing the board

process “use of knowledge and skills” on several board tasks, while Machold et al (2011) tested board members knowledge directly on boards’ strategy involvement.

“Knowledge source” and “prior knowledge” are further defined as an antecedent in several models presented in the absorptive capacity approach of dynamic capabilities (Cohen & Levinthal, 1990; Todorova & Durisin, 2007; Zahra & George, 2002). Similarly, Volberda et al (2010) defined “prior related knowledge structure” as an antecedent in their framework.

This study confirms these results by a significant and medium to strong positive impact of “presence of knowledge and skills” on all three board tasks defined in the model (model II). These results confirm the findings by Minichilli et al (2009) (several tasks) and Machold et al (2011) (strategy involvement). Details are presented in the figure below:

Figure 11: Presence of knowledge and skills and board task performance



In general, when “presence of knowledge and skills” is included in the model, the importance of ownership structure disappears from the model. While “chair ownership” and “TMT

ownership” showed significant impact on all three board tasks in model I, the only variable with significant impact in this model, is “TMT ownership”, which has an impact on board strategy performance. An explanation might be that what are important for the board tasks are presence of knowledge and skills and not the ownership of shares per se. However, owners will normally represent a source of knowledge and skills related to the firm.

Furthermore, firm size has a significant impact on the control and strategy task. Firm size is believed to have an impact on board strategy performance, since headquarters are believed to potentially exert an influence on strategy involvement (Huse, 2000). From agency theory it is known that control will be more demanding in large companies (Fama & Jensen, 1983) which might explain the impact of firm size on the board control task.

Board size showed same impact on the service task and the strategy task as in model I. For the strategy task a higher number of board members and a more diverse board could open for better perspectives in the discussions. Former research supports that diversity in the board is positively related to the strategy task (Carpenter & Westphal, 2001; Huse & Solberg, 2006; Westphal, 1999).

The number of employee elected board members was included since the data come from Norway where all companies with more than thirty employees are mandated by law to include employee elected members in the board. This variable turns out as significant and negative for the service task in both models and without significant impact on the two other tasks. The findings thus suggest that a higher number of employees’ elected board members limit the board service task. An explanation can be that employees’ elected board members, who are real “insiders”, do not represent outside information and knowledge as the other board members might do. As far as I know, these results have not been presented earlier. In a study on employee elected board members from 2009, Huse et al (2009) found that the number of employee elected board members showed a positive impact on CSR control and strategic

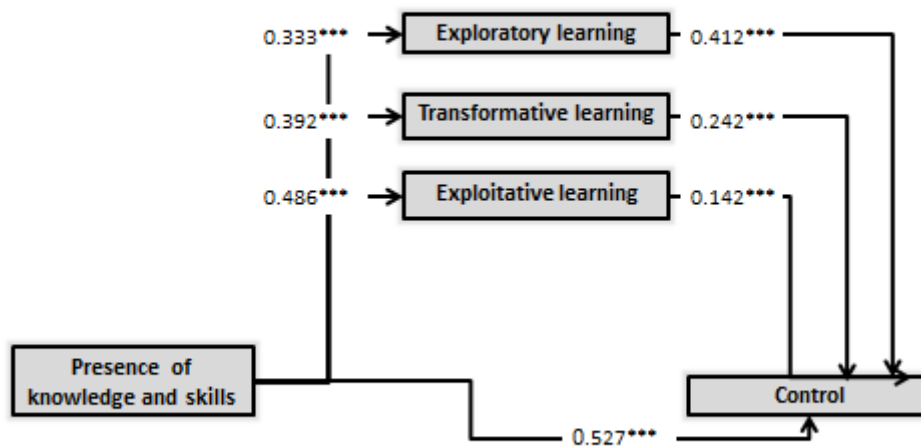
control, but was negative for behaviour control. Further, a positive relationship between employee elected board members and creative discussions in the board room was confirmed (Huse et al, 2009). Creative discussion should have a positive effect on board service performance. The findings in this study do thus not support the earlier findings from Huse et al (2009).

In conclusion, the research in this field is limited and the findings are not clear. Further research should be initiated.

5.2.3 The mediating effects

The hypotheses which stated a mediating effect between presence of knowledge and skills and board tasks were supported. Further, in the conceptual model three dimensions of absorptive capacity were defined: Exploratory learning, transformative learning and exploitative learning (Lane et al, 2006). I first tested each dimension individually to analyse whether a direct mediating effect was present (model III-V). Next, I tested the three dimensions simultaneously to include effects of complementarity between these three learning processes as proposed by Zahra and George (2002) (model VI). Some control variables showed significant impacts on the board tasks, but these are omitted in these figures avoiding too many details in the figures. The full results are reported in tables 25 – 27. The main results of the individual testing are presented in the figures below:

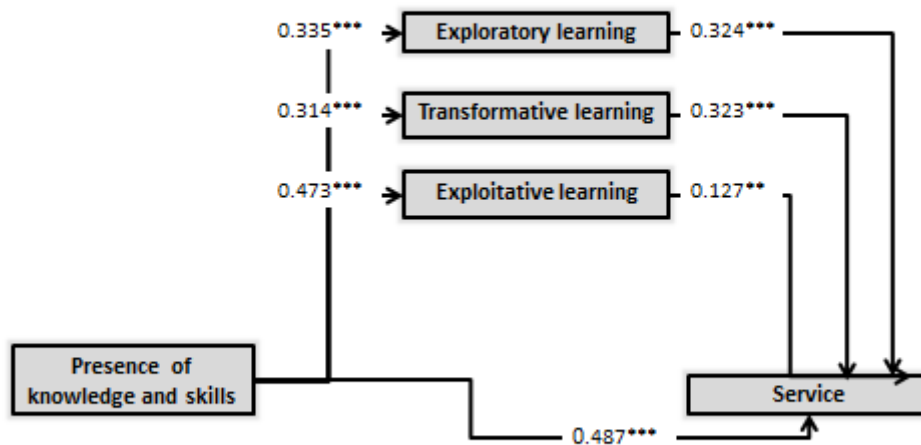
Figure 12: Mediating three dimensional effects on the relationship between presence of knowledge and skills and control



#: $p < 0.1$; *: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$

For the control task a significant ($p < 0.001$), partial mediating effect was confirmed for all the three learning processes. Further the mediation was strongest for exploratory learning and weakest for exploitative learning.

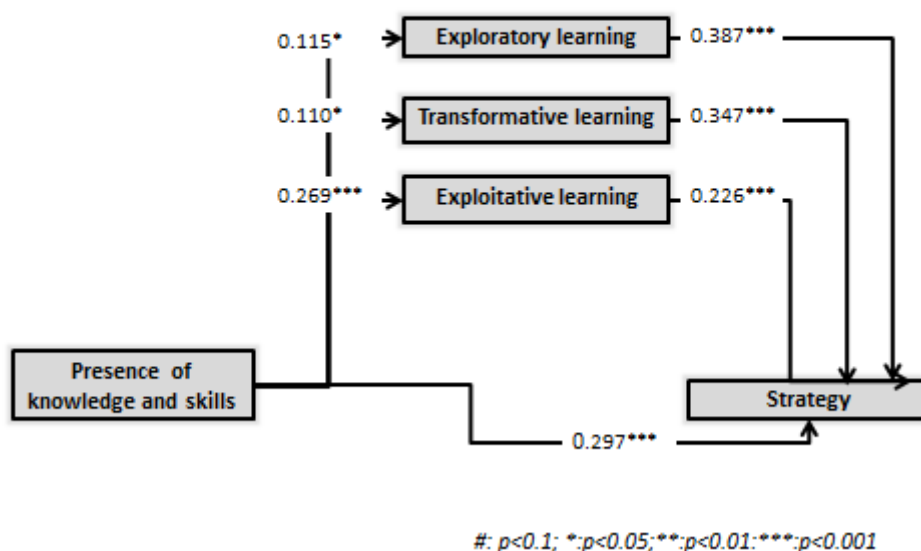
Figure 13: Mediating three dimensional effects on the relationship between presence of knowledge and skills and service



#: $p < 0.1$; *: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$

For the service task a significant partial mediation was confirmed for all three learning processes. The significance was slightly lower for exploitative learning ($p < 0.01$) than for the two other processes ($p < 0.001$). While the mediation was similar for exploratory and transformative learning, the effect was weaker for exploitative learning.

Figure 14: Mediating three dimensional effects on the relationship between presence of knowledge and skills and strategy



Finally, for the strategy task significant mediation was confirmed. Exploratory and transformative learning showed the strongest mediations, and for these two learning processes the significance for the impact of presence of knowledge and skills was reduced when the mediators were introduced. Exploitative learning was significantly mediating between presence of knowledge and skills and strategy, but the significance of presence of knowledge and skills was not reduced. All three learning processes thus represent good explanatory power towards the strategy task.

These results fit in with the findings by Minichilli et al (2012), where “use of knowledge and skills” showed a positive and significant impact on the control and advisory task, and the values of beta in that study did not vary much between the two tasks. Furthermore, Lichtenthaler (2009) reported a positive and significant effect by absorptive capacity and the three learning processes on the two dependent variables “innovation” and “(firm) performance”. This analysis showed a similar effect of absorptive capacity on the two tasks. When the dimensions were analysed, exploratory learning seemed to have the strongest effect on performance, while transformative learning had the best impact on innovation (Lichtenthaler, 2009, p.834). In general the effects of exploitative learning were strong toward both variables, but the impact was still strongest on innovation. In conclusion, “the data show that the learning processes have a major impact on innovation and performance through absorptive capacity” (Lichtenthaler, 2009, p.837).

The findings in this study thus underpin former research, but existing research has also been extended by verifying it in another context. First, the positive impact of “use of knowledge and skills” on board task performance as found by Minichilli et al (2012) is extended in this study by the analysis through the absorptive capacity lens. Second, the findings are similar to the ones presented by Lichtenthaler (2009) regarding learning processes in firms. In this study, exploratory learning is strongest on the control task, transformative learning on the service and strategy task, while exploitative learning has the strongest effect on the strategy task. The control and service task could be more related to Lichtenthaler’s (2009) performance task, because the performance task in his research is related to indicators such as growth, market share and profitability (Lichtenthaler, 2009, p. 831). On the other hand strategy in my research could be closer related to Lichtenthaler’s (2009) innovation task, since this task is measured by success factors related to “product development programs” (Lichtenthaler, 2009, p.831), which are a strategic issue. In that respect similarities of the learning processes

are confirmed. However, the two studies have been conducted within two different contexts, but similarities are interesting even if the results from this study represent new findings in a board context.

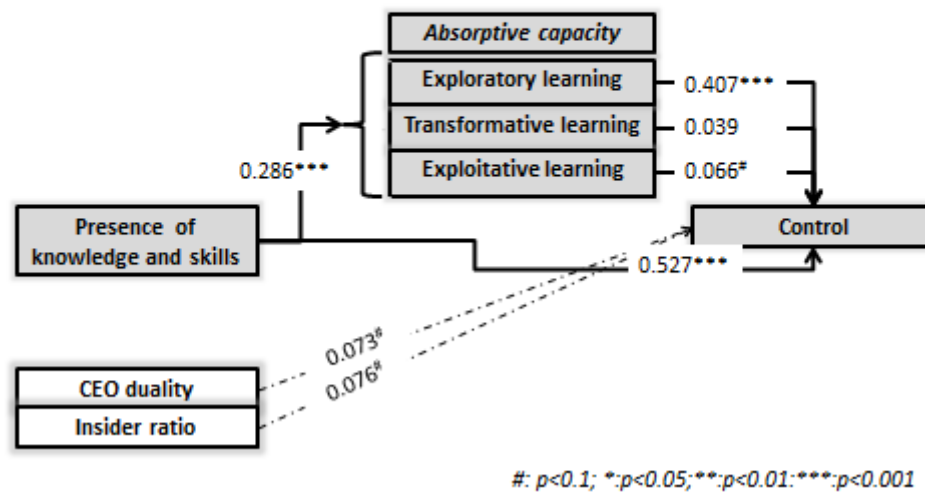
5.2.4 Complementary effects

To analyse complementarities between the learning processes, exploratory, transformative and exploitative learning, were simultaneously included as mediators between presence of knowledge and skills and the three defined board task.

First, complementarities are present. When the three processes are defined in the same model, the mediating effect is stronger as the impact of presence and knowledge and skills is reduced in this model compared with model II and III-V. These results confirm the findings by Lichtenthaler (2009), who found absorptive capacity as a higher-order positive and significant construct with complementarity confirmed. Lichtenthaler's (2009) testing was however, as reported above, conducted in a firm context with innovation and performance as the two dependent variables, while this analysis brings the results to a new context. As reviewed in section 2.6, absorptive capacity will work differently when related to boards compared with similar processes within a firm. However, "use of knowledge and skills" is important for boards (Minichilli et al, 2012), and by this analysis the absorptive capacity approach has shed new light to this process in boards.

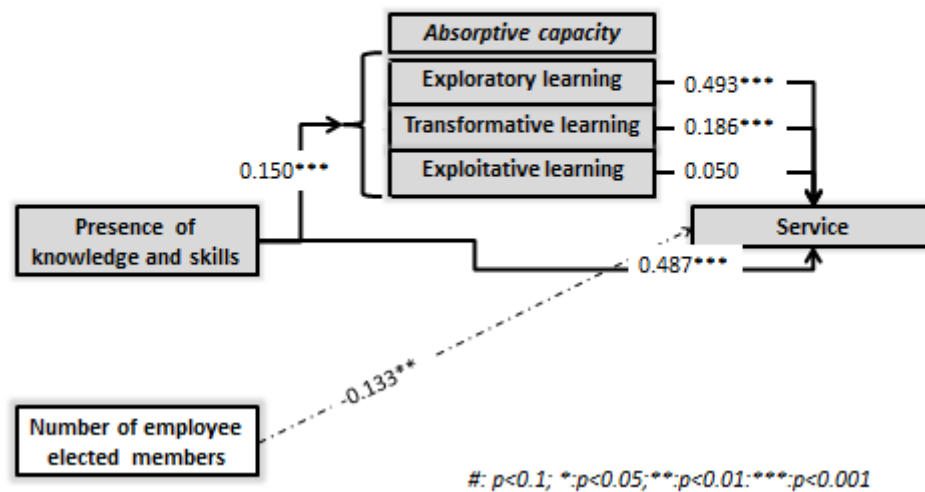
The results are presented in the figures below:

Figure 15: Mediating effects by absorptive capacity on the relationship between presence of knowledge and skills and control



When complementarities are considered, transformative learning shows no significant effect on the control task, and exploitative learning has a strongly reduced impact with a weaker significance. For the control task the exploratory learning is still the most important process. This model thus further clarifies how the learning processes work towards board task performance. The findings for the service task are presented in the next figure.

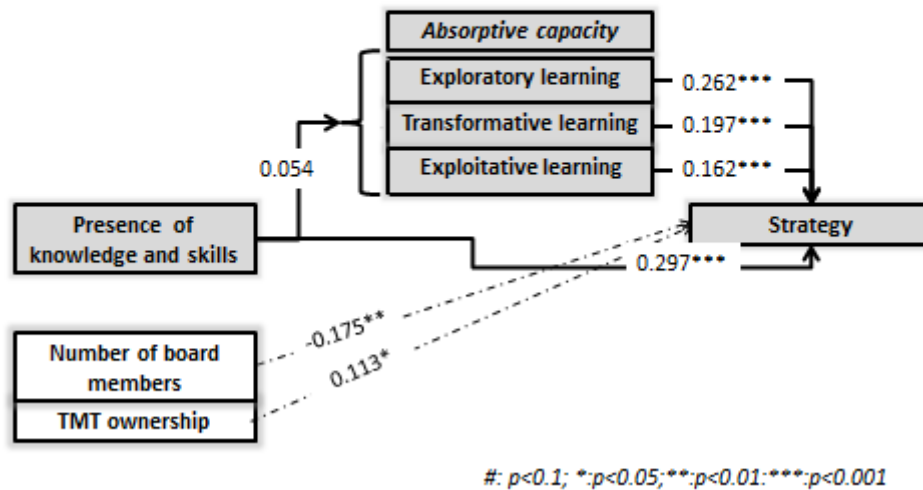
Figure 16: Mediating effects by absorptive capacity on the relationship between presence of knowledge and skills and service



When analysing the service task, similar findings appear. The mediation is stronger in this model compared with model III, and different effects by the various learning processes are present. For the service task exploratory and transformative learning have similar, significant ($p < 0.001$) and relevant impact. However, exploitative learning has no significant influence. Interestingly the mediating effect of transformative learning increases when complementarities are included in the model. This means that the complementarity effect on transformative learning by the other learning processes is strong.

Below results for the strategy task are reported.

Figure 17: Mediating effects by absorptive capacity on the relationship between presence of knowledge and skills and strategy



Finally, with the complementary model a full mediation is confirmed for the strategy task. All the three learning processes have significant ($p < 0.001$) and relevant impact on the task with exploratory learning as the strongest one. Thus, absorptive capacity defined by the three learning processes, represents a full mediator for the relationship between presence of knowledge and skills and the strategy task. For the strategy task “use of knowledge and skills”, here analysed by the lens of absorptive capacity, thus means more for the performance than the presence of these abilities.

The findings in model VI thus confirm the complementarities as theoretically proposed by Zahra and George (2002), Lane et al (2006) and Todorova and Durisin (2007). The existence of complementarities underpins the importance of simultaneous presence of all learning processes in a board even in boards where one specific learning process is the one with the most obvious improvement potential. As far as I know, these findings have not earlier been presented in a board context.

In general, presence of mediation is due to an explanatory power by the mediator with regard to the dependent variable. When absorptive capacity in this study fully or partly mediates presence of knowledge and skills, the learning processes explain how the impact of presence of knowledge and skills actually works on board task performance. The processes of exploring new knowledge, transforming and exploiting represent the dynamics in the movements from a current to a new situation of board task performance. Altogether, the introduction of absorptive capacity to a board context has opened another part of the black box (LeBlanc & Schwartz, 2007).

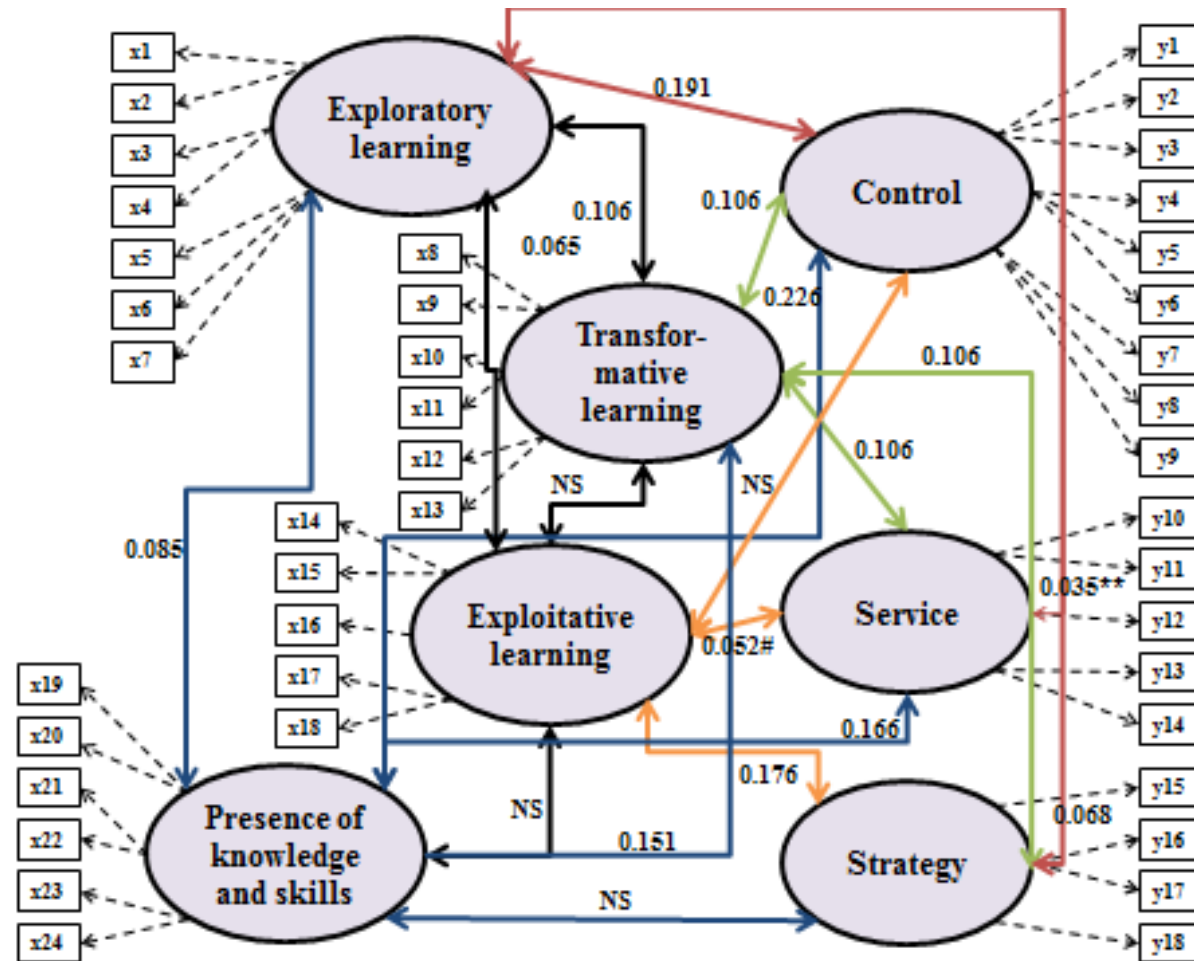
5.2.5 The full model analysed by SEM

As reviewed in chapter III structural equation modelling secures a better fit in the model compared with regression models. As developed in chapter IV the full model analysed by SEM supports the regression results. Furthermore, the covariances in this model (model VII) confirm that a full mediation is present for the strategy task, and a partial mediation is confirmed for the service and control task. In general, exploratory learning has the greatest impact on the control task, while transformative learning has the strongest influence on the service task and the exploitative learning is the strongest one for strategy. The tendencies of these results are similar to the findings in model VI. Details are shown in figure 18.

However, when applying SEM no correlation between the three board tasks is presupposed. Further analyses demonstrated that the three tasks are correlated, and when the covariance between the tasks is included in the model all the relationships are stronger and significant, and the overall fit of the model is better. The findings of the correlations fit in with earlier studies. Minichilli et al (2009) and Lichtenthaler (2009) reported strong correlations between the dependent variables (about 0.5). In this study the correlations are between 0.46 and 0.56 (table 24). The fact that the correlations between board tasks play a role in the board models represent an un-investigated, but interesting observation for later testing. However, board

activities are related and usually all tasks are performed during few board meetings. The results from one task will easily have impact on other tasks. As an example a strong focus on control in a board, might lead to other priorities when strategy is discussed. As far as I know, these effects have so far not been analysed.

Figure 18: The full model analysed by SEM



All values are significant, $p < 0.001$, unless the items are marked.

** - significant, $p < 0.01$, # - significant $p < 0.1$

NS – the item is not significant

Code of colours:

Blue lines: Covariances between presence of knowledge and skills and the other variables

Red lines: Covariances between exploratory learning and the other variables

Green lines: Covariances between transformative learning and the other variables

Orange lines: Covariances between exploitative learning and the other variables.

The analyses deduct that model VI is superior to models III-V, which are superior to model II and I as F-values and adjusted R square increase, which is further confirmed by eigenvalues. While the eigenvalue in model I is 5.1, the eigenvalue increases when mediation is included. In models III-V, where the learning processes are defined individually, the eigenvalue is 7.0. In model VI, where complementarity effects are included, the eigenvalue increased to 8.9. Eigenvalue measures the strength of the model when explaining the dependent variables (Field, 2009).

For model III-V and VI the findings suggest a strong mediating effect between presence of knowledge and skills and the control task, where the exploratory learning plays the most important role. Further, a similar mediating effect is stated between presence of knowledge and skills and the service task, where exploratory and transformative learning play important and similar roles. Finally, for the strategy task a full mediation is confirmed with a significant impact by all three learning processes, but with exploratory learning as the strongest one. With a more solid analytical tool, what is a tendency in model VI proves to be significant when testing by SEM. Further, the introduction of model VII underpins the results of model VI.

5.2.6 Summary

In the quantitative analysis the findings partly confirm earlier research on the importance of board processes, but they represent new analyses in a board context. Analyses based on the data from the Norwegian Value Creating Board Survey show that board task performance related to knowledge existence and use can be explained by the absorptive capacity concept, since the hypotheses as deducted in chapter II are supported. Absorptive capacity is a mediator between presence of knowledge and skills and board task performance. The mediation is full in the complementarity model for the strategy task, otherwise partial.

Further, for all three categories of board task performance, knowledge complementarities between the three learning processes do exist since the mediating effects are stronger when the learning processes are defined simultaneously. In general, processes in a board have significant implications for board task performance.

5.3 Discussions - the qualitative results

The qualitative analysis allowed for a deeper investigation, tracking absorptive capacity in a big company with a complex organisational structure. The data in this case study are triangulated - printed documentation (such as records from the board meetings and structural documents for Healthy, combined with newspaper articles), observations from board meetings and transcripts from six interviews.

Based on the results in chapter IV, the findings are as follow:

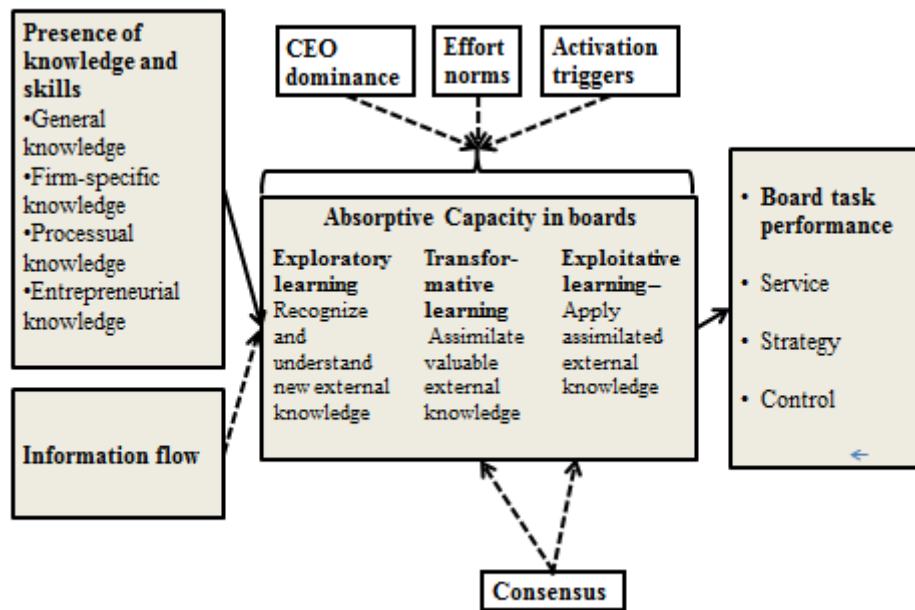
1. The value creation is not satisfactory since the service delivery of this company does not equal the goals in the strategy documents. This is an organisation which does not perform its mission and according to stakeholders, expectations are not met, which indicates a failing of the board.
2. The problems with value creation in the company are mirrored in the board tasks:
 - The control task has not been fulfilled – documented by newspapers etc.
 - The service task did not work – since the value creation was not satisfactory
 - The strategy is disconnected from what the board members are supposed to be doing. Further, a review of the board items during my observation period confirms this observation.
3. Presence of knowledge and skills is characterised by lack of information and a disturbance in information flows (see figure 7).

4. The CEO is directly and indirectly responsible for a number of decisions, which represents a shift of responsibility from the board members to the CEO, which is supported by the chair.
5. Activation triggers (mainly media coverage) stimulate all the three learning processes.
6. Shortage of co-ownership, individual motivation and the norms in the board as a team, have an impact on board task performance.
7. About absorptive capacity:
 - Exploratory learning does not work due to lack of information flows and due to lack of initiative from the board members to act exploratory.
 - There is a transformative learning and the consensus philosophy strengthens this learning.
 - The exploitative learning is, however, hindered by the consensus. When the board members do not agree, limited actions are initiated.
 - Due to the feedback loop (Todorova & Durisin, 2007; Volberda et al, 2010), the limited exploitative learning will in next instance hinder the transformative learning.
 - Due to complementarities between the learning processes, all the processes are eventually hindered.

5.3.1 An extended and modified model

The findings from the qualitative analysis contributed to a modified model:

Figure 19: Absorptive capacity in a board context – an extended and modified model



Solid lines (—) – from the quantitative study

Dotted lines (---) – from the qualitative study

The modifications will be further discussed in the sections below.

5.3.2 Consensus and learning processes

An extended tradition of consensuses in the board's decision-making opens for a questioning if there is a shortage of knowledge and information flows in the board to ensure transformative learning. On the other hand, one or more of the absorptive capacity processes might be missing. Consensus in a given case might be a sign of the opposite - a long and extensive discussion with a similar transformative learning process, eventually resulting in a real common sense among the board members of purpose and directions. On the other hand, such a transformative or even exploitative learning process would have been observable at the board meetings, and I would expect the union representatives and the users' representatives to

underline a tradition for long processual board discussions in the board when interviewed.

The focus on consensus was strong, as a board member explained:

" as we're concerned, unless there is a real contradiction, we are committed to consensus meetings" (board member 2)

And the chair made this comment:

"if everyone agrees, then it is probably more correct, then it might be a better decision than what was first laid there"(board chair)

The chair underpins the importance of consensus by explaining that processes which make board members agree are valuable also because the final conclusion has been discussed and examined in several ways during the discussions. The last statement is thus based on a former arguing for long processes in the board, explaining why consensus has turned out to be fruitful.

Research on consensus practice in boards is limited. Leblanc (2005) included the concept in a performance evaluation for the board chair with the following item: "Chair deals effectively with dissent and works constructively towards achieving consensus in arriving at decisions", (Leblanc, 2005, p.662). Goodstein, Gautam & Booker (1994) studied the effects of board size and diversity on strategic functions of boards, and reported that "large boards may face a number of barriers in reaching a consensus on important decisions" (Goodstein et al, 1994, p.2). Theirs is an empirical paper, but they did not test consensus practice in their study. However, they found that there is a significant negative relationship between board size and number of services reorganized (Goodstein et al, 1994). This may indicate that consensus is harder to achieve in larger boards. Bainbridge (2002) reviewed evidence on group decision-making related to boards. He reported biases between individual and group decision-making. Furthermore, he concluded that consensus practice is an adaptive response to the stresses in boards, even at the expenses of quality decision-making (Bainbridge, 2002). He further commented: "Highly cohesive groups with strong civility and cooperation norms value

consensus more than they do a realistic appraisal of alternatives” (Janis, 1972; Bainbridge, 2002, p.32). In sum, the findings from this research and indications from the literature suggest that further research is needed on the consequences of consensus in boards.

Furthermore, in this thesis absorptive capacity is used to analyse the process related to” use of knowledge and skills” in boards. As claimed by the chair of Healthy, the transformative learning might improve due to the discussions preceding a consensus. However, when the board directors do not agree upon activities as a follow up of the discussions, the consensus might easily end with an agreement of postponing or cancelling new activities. From previous research of the absorptive capacity approach, it is stated that the transformative and exploitative learning represent a dynamic process where the two dimensions are working simultaneously (Todorova & Durisin, 2007). With these feedback loops (Volberda et al, 2010) a lack of exploitative learning will eventually hinder further transformative learning. As a result the whole learning process will be limited. Processes as described by the absorptive capacity approach are thus recognised in the study, and the learning processes contribute to explain the board processes (or lack thereof) in Healthy.

5.3.3 CEO dominance and the decision-making by the board

Due to Norwegian laws CEO duality in a big company such as Healthy is not allowed. As described in chapter IV, the CEO in Healthy acts partly as she might have done in a company with CEO duality. The board members confirm this by saying:

"..there is a very close cooperation between the CEO and the board chair, and from time to time it might be hard to see who is who." (Board member 2)

The findings thus suggest that the power of the CEO has an impact on board task performance and further on the value creation as stated by the union representative:

"..the management, is so strong, that it is hard for anyone else to make corrections, because you have not got enough time or possibilities of using your energies in a case like that..."(Union representative)

From the literature CEO duality and CEO power have been described by several researchers (Brickley et al, 1997; Dalton & Kesner, 1987; Goyal & Park, 2002; Jensen, 1993; Rechner and Dalton, 1991; Zahra & Pearce, 1989) and by a meta-analysis by Dalton et al (1998). Even if the literature is not clear on this point, several results fit in with the findings in this thesis: in agency theory ineffective board structure is believed to result in lack of directors' involvement in the board tasks. This is assumed to be caused by the dominance by CEO's on boards. Fama & Jensen (1983) argued that concentration of decision management and decision control in one person gives this person too much power and consequently lowers the effectiveness of board monitoring. Furthermore, agency theory recommends a structure of leadership which takes the monitoring and control aspect into account. Leaving an essential part of monitoring to the CEO is more related to stewardship theory (Davies et al, 1997).

In their study based on 108 interviews, McNulty and Pettigrew (1999) underline that the board members should be in control when strategic decisions are initiated. They further conclude that "the prime objective of the executive at the board meetings is to gain board "approval" for the proposed course of action" (McNulty & Pettigrew, 1999, p.56). However, the same study reported that in average, about 95 per cent of proposals put forward by executives were approved by the board directors. The arguments as well as the empirical findings from McNulty and Pettigrew (1999) fit well in with the data from Healthy.

Furthermore, in a more recent study, He and Huang (2011) addressed five factors of informal board hierarchy. One of these was the rank of a firm's CEO in this hierarchy. The empirical results showed a negative relationship between the CEO's rank and firm performance. However, this result was not statistically significant, which according to He and Huang (2011) was due to a low appearance in the sample. The indications from Healthy underpin this proposed, but not confirmed, finding. Altogether, the leadership structure in Healthy may be an explanation why the strategic activities are limited.

5.3.4 Effort norms

Lack of co-ownership and team feeling combined with a strong CEO were reported in chapter IV. As a consequence, focus is drawn to effort norms among the board members, which are related to individual motivation among the board members and the norms in the board as a team (Forbes & Milliken, 1999). The limited activity in the board might be due to lack of these effort norms.

As reviewed in chapter II effort norms are described by Forbes and Milliken (1999) as a board process together with “use of knowledge and skills” and cognitive conflicts. Former research has confirmed a positive relationship between effort norms and board task performance (Minichilli et al, 2012; Zattoni et al, 2012; Zona & Zattoni, 2007), which fits in with the observations in Healthy. However, correlations between effort norms and other board processes, such as use of knowledge and skills, have as far as I know, never been empirically tested. Observations from Healthy may indicate that absorptive capacity and effort norms are positively related. In a board with active learning processes, efforts to perform should be expected, which might explain this correlation.

5.3.5 Relations between information flows and decision-making

Cohen and Levinthal (1990) discussed what to do in an organisation when information flows are random and not clear. When it is unclear where the knowledge is best applied, this flow will be disturbed. Further, Forbes and Milliken (1999) proposed that board members’ ability to use its knowledge and skills could be operationalized by measuring information flows among board members. Information flows could therefore be an antecedent to board processes and related to addressing the information correctly. Thus, the results from this study extend some of the models of absorptive capacity and boards. Presence and use of knowledge and skills are earlier confirmed as an important respectively antecedent and process in boards

(Machold et al, 2011; Minichilli et al, 2009, 2012). This study further extends these results by the indication of information flows to be important on their own. Information flows should be included as another antecedent when testing the effects of “presence and knowledge and skills” and “use of knowledge and skills” on board task performance.

In conclusion, in the investigation of absorptive capacity more light has been shed to the importance of information flows to 1) renew and secure the presence of knowledge and skill and 2) to improve the exploratory learning in boards. The findings in this thesis are therefore underlining the importance of the existence, directions and quality of information flows in boards as well as related to the absorptive capacity approach.

5.3.6 Activations triggers

Activation triggers are well known from the literature of absorptive capacity and dynamic capabilities. The concept was introduced in relation to absorptive capacity by Zahra and George (2002, p.193) as “events that encourage or compel a firm to respond to specific internal or external stimuli” (Winter, 2000; Zahra & George, 2002). Activation triggers were further defined as a mediator between prior knowledge (and knowledge complementarity) and absorptive capacity (Zahra & George, 2002, p.193). The triggers are thus expected to have an impact on the use of knowledge and skills. In Healthy increased focus on the value creation (of lack thereof) from media and outsiders activated the board members. As one of the board members confirmed, input from media plays a role:

“My most important sources are actually in a way the presentations of items in the board meetings, but of course as a board, then we also follow various media with interest” (board member 2).

As soon as the media started to report problems and issues, the board members were asking more questions related to the actual situation, and they presented suggestions to solve problems. The study therefore confirms the activation triggers phenomenon. He and Huang

(2011) found environmental dynamism to be significantly related to firm performance. The phenomena activation triggers as described in Healthy represent activation and dynamism from external sources as media and stakeholders, which confirm the findings in He and Huang's (2011) study.

5.3.7 Conclusions

Lack or shortage of the learning processes in the board contributes to the explanation of the issues with regard to board task performance and value creation. The exploratory learning seems to be limited by the information channels of the board members, which was underpinned in the interviews when asking for which and how much information should actually be available to the board members. The functions of the CEO and her top management team, especially with regard to the knowledge and information flows, played a certain role in relationship to this issue. It is reasonable to conclude that the positioning of the CEO and the chair, being closely related to the governance structure in Healthy, represents key factors to explain how the learning processes work, and especially why they do not work better. Specifically, with regard to information flows, most information within Healthy is distributed or forwarded by the CEO and the TMT as illustrated in figure 7.

Next, the focus on consensus as stated by the chair and discussed above has implications for transformative and exploitative learning. The wide range of consensus appearance in the board's decision-making further brings attention to the importance of which learning processes are conducted in which part or level of the company and when. Processes ensuring to establish understanding of the activities in the local subsections among the board members, might thus imply an improved board task performance.

In conclusion, this thesis contributes to theory by bringing themes from other domains such as the dynamic capabilities approach developed within strategic management research. Theories

about boards from corporate governance literature are therefore extended with the absorptive capacity concept.

Furthermore, board processes have been analysed by mixed methods. The importance of processes in boards has been confirmed, and especially the importance of use of knowledge and skills related to learning processes, has been underpinned. The extended and modified model further shows that information flows can be a possible antecedent to board task performance, and that the leadership style and consensus practice in boards are of importance to board task performance. The analyses have mainly been concentrated at group level, but the case study was partly focused on individual behaviour. Therefore, this thesis contributes to highlighting the value of multilevel board research. Finally, the impact of employee elected board members on board task performance was reported in the quantitative and the qualitative study. Previous research on this field is limited, and this topic should thus be further investigated.

5.4 Implications for board practice

The findings in this thesis will have several implications for board practice. As concluded by Minichilli et al (2012), “regardless of the country context... the findings point out the use of knowledge and skill as a more universalistic practice, which corporate boards should carefully follow” (Minichilli et al, 2012, p.210). This conclusion and the findings in this thesis have implications for board practice, especially related to use of knowledge and skills.

First, the conclusions of the existence of mediation between absorptive capacity and board task performance provide guidelines for possible improvements in board activities. By applying the tools in the absorptive capacity approach, the board members will be able to analyse and discuss how available knowledge and skills are processed and utilised. Specifically, analyses based on the absorptive capacity approach might contribute when there are problems with performance or results in boards. Second, the specification of learning

processes including descriptions of how each process works and can be improved, should be generally useful in a board context. The strength of the board members with regard to the learning processes will vary. The aim should, however, be to customise the board composition and routines to the need the board members in every single board have for improvements. As explained more detailed below, such a goal will have consequences for recruitment and work style. Similarly, the new knowledge of how various board tasks respond differently to various learning processes is important to board members and chairs. Knowledge of the learning processes can be employed to improve the use of knowledge and skills in board related to the actual issues. Third, the analyses of consensus as a tool to improve transformative learning and the possible opposite effect on exploitative learning should be considered by board members. Fourth, the findings of CEO dominance and activity, and the importance of effort norms in boards, indicate that knowledge is an important factor when board composition is considered. Finally, division of labour between CEO and the chair should be focused. More detailed recommendations are presented in the sections below.

5.4.1 Regarding board selections

In general, there will be a need for members who are strong on the various learning processes, because there are individual variations in board members' learning abilities. Members with strength in the different learning processes can complement each other to stimulate absorptive capacity. Further, depending on which tasks are the most important ones in the board at the current time, corresponding competence should be preferred.

More specifically, the analyses showed that 1) for the control task exploratory learning is the most important process. 2) For the service task exploratory and transformative learning are the most important processes, still with exploratory learning as the most important when complementarities are considered, and 3) for the strategy task all three learning processes

have a sustainable impact. For the strategy task board members should also notice that the learning processes should be focused for presence of knowledge and skills.

Further, for exploratory learning members of nomination committees should look for information-seeking directors who are actively building networks and who are participating in lobbying and legitimation. Second, for transformative learning, active board members and board members with cooperative working style should be preferred as well as board members who give sufficient priority to the board tasks.

5.4.2 How to promote learning processes

Obviously, exploratory learning is important for boards. To promote this learning, board members should be encouraged to actively seek their own information, and they should be encouraged to exchange information with the rest of the board. Furthermore, the findings detect that board members should be encouraged to build networks and participate in lobbying and legitimation.

For transformative learning a culture of strong and positive cooperation in the board should receive high priority. This is important to make the board members familiar with each other's competence. Further, a positive spirit in the board will promote a full use of board members knowledge and skills, and the members will normally be more active during the meetings. Effort norms will encourage board members' discussions, making it more difficult for board members to hide behind "pluralistic ignorance" (Minichilli et al, 2012, p.210; Westphal & Bednar, 2005). As reported in section 5.3.4, effort norms seem to be related to absorptive capacity. An increase of the absorptive capacity of a board should thus improve the discussions and the activities in the board room.

Finally, board activities should be facilitated to make board members familiar with each other's competence, because there is a good match between work division based on existing

knowledge and skills, and high performance. Another prerequisite for this is ensuring that the board members fully use their knowledge and skills inside and outside the board room.

With regard to exploitative learning, board processes which promote further development and innovation should have the main priority. Board education, conducted by internal and external courses, presentations and seminars should be included in all board agendas during a year.

These findings are of importance for all board members. However, the chair of the board will normally be responsible for board development and education, which makes this new information especially important for board chairs. Finally, the observations of the CEO in Healthy and the consequences her power and attitude represented for the board should be generally considered by CEO's and board chairs, not at least to improve the effort norms of board members. Machold et al (2011) further showed that board leadership efficacy is positively and significantly related to board strategy involvement. One of the items related to leadership efficacy is "motivating and using each board member's competence" (Machold et al, 2011, p. 374). As a chair, the responsibility of forwarding and utilising the existing competence should be focused and safeguarded. Chairs should thus be well aware of the possibilities learning processes represent with regard to this responsibility.

5.5 Implications for corporate governance codes

The findings in this thesis might have implications for corporate governance codes. Existing codes place great emphasis on board composition and structure, but this study shows that structure and composition alone have limited explanatory power. This study confirms previous findings which report that board processes are more important for board task performance than board composition and structure. Knowledge in general is important for board members, and use of knowledge and skills as described by learning processes, is essential. This focus should be moved into the board rooms and to committees who nominate

board members. Furthermore, corporate governance codes should be aligned with these findings by developing recommendations for board members' development practices.

5.6 Summary

This thesis contributes to new knowledge on boards by investigating hitherto under researched board processes. Most important, absorptive capacity has been shown to be a well-fitting tool to analyse use of knowledge and skills in boards. This conclusion is based on both the quantitative and the qualitative analysis. More precisely, board processes described by the three dimensions of the absorptive capacity concept, contribute individually and complementarily, as mediators between presence of knowledge and skills and board task performance. Second, the effects on three board tasks are analysed. The effect of the learning processes varies between the tasks as do the mediating effect by absorptive capacity. Third, the qualitative analysis indicates that information flows play an extended role in relationship to absorptive capacity and board task performance. Finally, effort norms seem to be correlated to use of knowledge and skills, and use of consensus has an impact on transformative and exploitative learning. None of these findings have, as far as I know, been former reported in relationship to boards. Most of these findings have implications for board practice.

VI. Conclusions

6.1 Introduction

This thesis has set out to provide a better understanding of board processes related to use of knowledge and skills based on the following research questions: "What is the effect of absorptive capacity on board task performance? How can the effect of absorptive capacity on board task performance be described and explained?" An absorptive capacity approach has been employed, and a quantitative and a qualitative analysis have been conducted and reported. This chapter reports the conclusions of the thesis.

Chapter I presented an outline of the study and the justification for research. The contribution to knowledge was described. In chapter II literature on corporate governance, dynamic capabilities and absorptive capacity were reviewed. The literature review covered both theoretical foundations and existing empirical research findings. Based on gaps in knowledge a conceptual model was derived and hypotheses defined. Further, a call for qualitative research in the field was noted. Chapter III reported chosen research design and methodology, based on a review of research methods. I further presented the survey for the quantitative analysis and the focus of the case study. Measurements for the variables in the conceptual model were derived. Validity and reliability tests were explained and elaborated. Chapter IV reported data analyses of the measurement models as derived in chapter III and of the conceptual model which was hypothesised in chapter II. Validity and reliability of measurement constructs were established. Regression and SEM were employed in the quantitative study. The hypotheses were significantly supported. Results from the qualitative study lead to a modified and extended model. Chapter V elaborated discussions on research findings from the previous chapters.

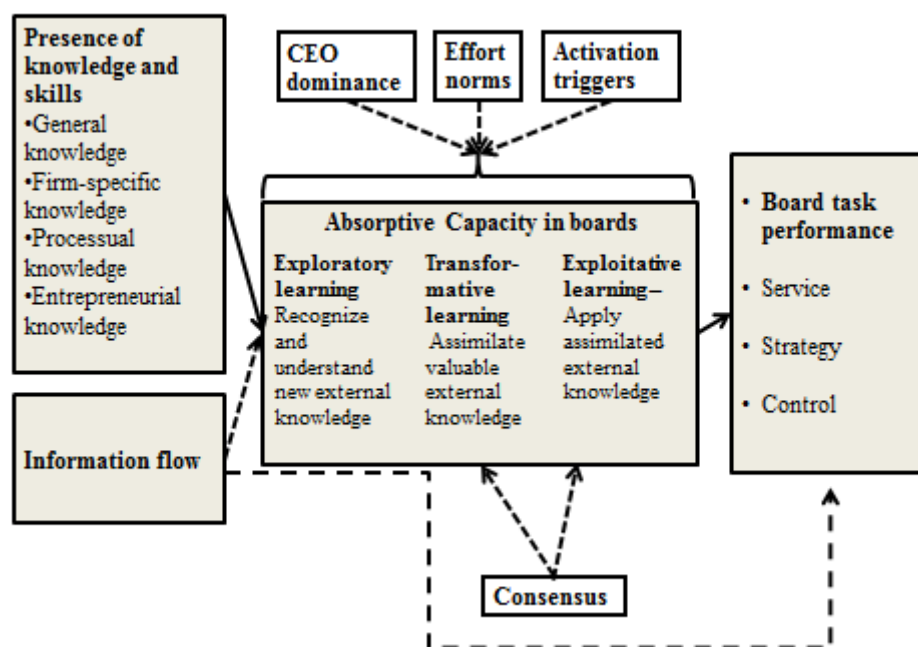
This chapter first reviews the main research objectives and outlines the research outcomes. The modified and extended conceptual model is summarised. Furthermore, the contribution to knowledge and the implications of research findings are explicitly presented. Limitations are discussed, and consequences for future research and board practice are outlined.

6.2 Research objectives and outcomes

This research had several objectives. The most important objective was board of directors and the understanding of use of knowledge and skills. Another objective was to develop the absorptive capacity approach and its exploitation opportunities in a board context. Analyses of the survey data and conclusions from the case study have led to a number of important findings which increase our knowledge of boards with regard to exploration, transformation and exploitation of knowledge and skills.

The modified and extended conceptual model was derived from the literature review in chapter II and modified based on the findings in chapter IV:

Figure 19: Absorptive capacity in a board context – an extended and modified model



The major findings are:

- For all the three board tasks, control, service and strategy, a positive and significant impact of the presence of knowledge and skills on board task performance was detected.
- Absorptive capacity is a significant mediator between presence of knowledge and skills and board task performance. The effects differ between board tasks.
- A full, positive and significant mediation is confirmed for the strategy task, otherwise partial and positive mediation were found.
- Detailed analyses presented significant results for exploratory, transformative and exploitive learning and for the simultaneous mediation of the three learning processes.
- Control variables were tested and some of them showed significant impact on the board tasks. The results differed with the board tasks. When testing the impact of the control variables on the board tasks the model had a limited explanatory power.
- Complementarities between learning processes were significantly confirmed.
- Information flows are indicated to be important as an antecedent for board task performance and for absorptive capacity.
- The qualitative evidence shows that consensus plays a role for transformative and exploitative learning.
- Complementarities between absorptive capacity and effort norms are indicated which requires an extension to existing models such as the one derived by Forbes and Milliken (1999).
- The power of CEO and the distribution of responsibility between the chair and the CEO have impact on board task performance.
- Activation triggers tend to have an impact on the learning processes.

These results suggest that use of knowledge and skills, described by learning processes, play an important role when explaining board activities. Analysing board activities is not purely about relationships between board directors' attributes, but the way competence and knowledge are discovered, shared and utilised in a board setting seem to play a more important role. More focus should be directed to these processes in the future. Absorptive capacity should be further employed in a board context.

6.3 Contributions to knowledge

This thesis contributes to knowledge on boards in several ways. First, the study captures how knowledge, skills and information are traced, shared and developed among board members as a key source that underpins the decision-making in boards. The general importance of presence of knowledge and skills in boards is underpinned and confirmed. Use of knowledge and skills on boards has only received limited attention as a significant determinant of board tasks (Minichilli et al, 2012; Zattoni et al, 2012; Zona & Zattoni, 2007). Second, dimensions defined within absorptive capacity are employed in a board context, shedding new light on learning processes in boards, which also matters for board task performance. Third, as far as I know, this is the first analysis of absorptive capacity in a board context. The research thus contributes with an extended application of this concept, responding to the call from researchers to conduct a new and more extensive research to analyse and integrate the full absorptive capacity concept (Lane et al, 2006; Volberda et al, 2010; Zahra & George, 2002).

For a fertile field, such as the absorptive capacity approach in a board context, a wider range of data collection methods should be executed. The case study presents a contribution thereof, and an extended and modified model for absorptive capacity in a board context was derived based on the case study. The possible impact of information flow as an antecedent to board task performance and to absorptive capacity, are findings which underpin former conceptual models (Cohen & Levinthal, 1990; Forbes & Milliken, 1999). Significant complementarities

between learning processes were detected in the study, confirming Lichtenthaler's (2009) results from a firm context. Finally, among researchers there have been calls for process studies, as well as for mixed research (Eisenhardt & Graebner, 2007; Pettigrew, 2013). This thesis responds to these calls.

In conclusion, an increased focus from research should be attended to knowledge and skills in boards. More specifically the learning processes should be observed and analysed, because I have empirically tested and found that they have an impact on board task performance.

The conclusions also have implications for board practice. Board members should focus on use of knowledge and skills to improve board tasks. More specifically, the new knowledge of learning processes and their relationships to the single board task, represent a tool for boards to direct their learning efforts. The actual issues in the board might thus be better solved. For board recruitment, members with strength in the different learning processes should be nominated to secure the absorptive capacity processes. Competence corresponding with the board issues should be preferred. Practically, that means that a board with issues related to information flows should aim to recruit members with networks and strong abilities to collect and share information within the organisation. A board where the members fail to share knowledge and information with each other should look for new members who fully use their own and others' knowledge and skills. To promote learning processes in general, board education conducted by internal and external courses, presentations and seminars should be included in all board agendas during a year.

Further, focus should be extended towards use of consensus. A too extended use might however, hinder the decision-making in the board. The qualitative evidence suggests an inverted u-shape, but further testing will be needed. A certain amount of consensus might thus however, strengthen the transformative learning.

6.4 Limitations

There are several limitations in this study. First, the quantitative analysis is based on an existing and predefined survey, which was constructed for board research in general. When selecting measurements for the variables, a selection between predefined items was conducted. A specific survey for this research could have been better directed to the research questions instead of being based on generally defined items. However, the Value Creating Board Survey covers many items in most fields of board research, and the response rate is satisfactory (Lervik et al, 2005).

Second, the CEO is the respondent in all items. One single respondent group may lead to a specific view on the questions, which might have been different when employing answers from the chair or from general board members. Still, use of multiple respondents would have raised other limitations and biases (Minichilli et al, 2012). Third, the data come from one single country, Norway, and the results might be different in other countries. The data have however been compared with other countries in former research, confirming their general validity (Minichilli et al, 2012). Nevertheless, the need for further cross-country studies drawing on a unified theoretical framework is detected (Minichilli et al., 2012).

Fourth, the legal requirement of employee elected board members for companies with more than thirty employees is country specific to Norway. Control variables related to the number of board elected members in the boards tested significantly. Furthermore, the case study revealed that union representatives in the board play an important role in the board activities. The employee elected members in many Norwegian boards might thus have an impact on the findings, and this research should be continued by other tests in Norway and by tests in other countries.

The qualitative research also has limitations. The case study is based on one company which is publicly owned. The company was observed during a period when several issues were

raised regarding its services. Ideally, several case studies should have been conducted, in various sectors and within companies of various sizes (Eisenhardt & Graebner, 2007). In general, comparative board research should be conducted, including other case studies and new surveys and observations in other countries.

6.5 Directions for future research

This thesis has extended the concept of use of knowledge and skills in boards by using the lens of absorptive capacity. Absorptive capacity is a fertile concept in a board context. As a general contribution to board research a conceptual model has been derived, extended and modified. This study may work as a foundation for future research within absorptive capacity in boards. Future research should include studies employing other methods. Cross-national and cross-sectorial surveys should be applied for extended testing of the results.

Furthermore, three board tasks were employed, based on Zahra and Pearce (1989) research. Other tasks should be investigated. Innovations which have been defined as an output variable within the absorptive capacity approach (Cohen & Levinthal, 1990; Todorova & Durisin, 2007; Volberda et al, 2010,; Zahra & George, 2002) could be another task to study. Furthermore, presence of knowledge and skills has been defined and measured as one single antecedent. Information flows have been identified as another possible antecedent. In general, a more diversified knowledge concept could be introduced in the analyses. Finally, the research on effects of employee elected board members is limited and should be further investigated.

The qualitative research puts forward several indications. The full impact of knowledge flows and consensus should be analysed in the future together with investigations of complementarities between board processes. Finally, more research might reveal details of consequences of activation triggers in a board context.

6.6 Final Conclusions

This thesis presents a contribution to the research on board activities and board processes. Generally, the importance of learning processes in boards is identified. The value of absorptive capacity in a board context is shown, and significance of learning processes is detected. Differences between the impacts with regard to the board tasks have been revealed. Further, information flows have been put forward as a possible additional antecedent for board task performance and absorptive capacity. Based on indications from the case study, effects of consensus practice are put forward. Future research should investigate possible complementarities between board processes.

The findings have implications for board practice and for future research which have been outlined in chapter V.

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VIII Appendices

Appendix I: Table 33: Measurements of absorptive capacity in a firm context

Researcher(s)	Contribution	Measurements
Szulanski (1996); Szulanski, Capetta & Jensen (2004)	In the two articles item measurements where developed. The measurements have been a foundation for further recent developments	<ol style="list-style-type: none"> 1. Members of [recipient] have a common language to deal with the [practice]; 2. [recipient] had a vision of what it was trying to achieve through the transfer; 3. [recipient] had information on the state of the art of the [practice]; 4. [recipient] had a clear division of roles and responsibilities to implement the [practice]; 5. [recipient] had the necessary skills to implement the [practice]; 6. [recipient] had the technical competence to absorb the [practice]; 7. [recipient] had the managerial competence to absorb the [practice]; 8. it is well known who can best exploit new information about the [practice] within [recipient]; 9. it is well known who can help solve problems associated with the [practice].
Jansen et al (2005)	By exploring how organisational antecedents affect potential and realised absorptive capacity, this study identifies different measures for two dimensions of absorptive capacity.	<p>Potential and realized absorptive capacity was used in the study. Potential absorptive capacity consists of acquisition and assimilation of new external knowledge. Six items assessed the intensity and direction of efforts expended in knowledge <i>acquisition</i>. In addition three items measured <i>assimilation</i>, gauging the extent to which units were able to analyse and understand new external knowledge.</p> <p>Measurements: Potential Absorptive Capacity <i>Acquisition</i></p> <ol style="list-style-type: none"> 1. Our unit has frequent interactions with corporate headquarters to acquire new knowledge. 2. Employees of our unit regularly visit other branches. 3. We collect industry information through informal means (e.g. lunch with industry friends, talks with trade partners). 4. Other divisions of our company are hardly visited. (reverse-coded) 5. Our unit periodically organizes special meetings with customers or third parties to acquire new knowledge. 6. Employees regularly approach third parties such as accountants, consultants, or tax consultants. <p><i>Assimilation</i></p> <ol style="list-style-type: none"> 7. We are slow to recognize shifts in our market (e.g. competition, regulation, demography).

		<p>(reverse-coded)</p> <ol style="list-style-type: none"> 8. New opportunities to serve our clients are quickly understood. 9. We quickly analyse and interpret changing market demands. <p>Realized Absorptive Capacity</p> <p><i>Transformation</i></p> <ol style="list-style-type: none"> 10. Our unit regularly considers the consequences of changing market demands in terms of new products and services. 11. Employees' record and store newly acquired knowledge for future reference. 12. Our unit quickly recognizes the usefulness of new external knowledge to existing knowledge. 13. Employees hardly share practical experiences. (reverse coded) 14. We laboriously grasp the opportunities for our unit from new external knowledge. (reverse-coded) 15. Our unit periodically meets to discuss consequences of market trends and new product development. <p><i>Exploitation</i></p> <ol style="list-style-type: none"> 16. It is clearly known how activities within our unit should be performed. 17. Client complaints fall on deaf ears in our unit (reverse coded) 18. Our unit has a clear division of roles and responsibilities. 19. We constantly consider how to better exploit knowledge. 20. Our unit has difficulty implementing new products and services. (reverse-coded) 21. Employees have a common language regarding our products and services. <p><i>All items were measured on a seven-point Likert-scale on which 1 was "strongly disagree" and 7 was "strongly agree."</i></p>
Lane et al (2006)	<p>Based on a firm's fundamental learning processes: its ability to identify, assimilate, and exploit knowledge from the environment, three dimensions of absorptive capacity were developed and defined in this article:</p> <p>Absorptive capacity is a firm's ability to utilise externally held knowledge through three sequential processes: (1)</p>	<p>Developed a process model for absorptive capacity in a firm with three factors directly related to the concept:</p> <ol style="list-style-type: none"> 1. Recognize and understand new external knowledge (exploratory learning) 2. Assimilate valuable external knowledge (transformative learning) 3. Apply assimilated external knowledge (exploitative learning)

	recognising and understanding potentially valuable new knowledge outside the firm through exploratory learning, (2) assimilating valuable new knowledge through transformative learning, and (3) using the assimilated knowledge to create new knowledge and commercial outputs through exploitative learning.	
Cadiz et al (2009)	Cadiz et al (2009) conducted a study of possible measurements of absorptive capacity. They reintegrated a component of value identification which was originally proposed by Cohen and Levinthal (1990) and most recently recommended by Todorova and Durisin (2007). By statistical methods they further defined nine items for the measurements of absorptive capacity in firms. The method was based on absorptive capacity related to three dimensions, and on a sample from science/technological sector.	<p><i>Assessment</i></p> <ol style="list-style-type: none"> 1. People in my team are able to decipher the knowledge that will be most valuable to us. 2. It is easy to decide what information will be most useful in meeting our customer's needs. 3. We know enough about the technology we use to determine what new information is credible and trustworthy. <p><i>Assimilation</i></p> <ol style="list-style-type: none"> 4. The shared knowledge within my team makes it easy to understand new material presented within our technical areas. 5. It is easy to see the connections among the pieces of knowledge held jointly within our team. 6. Many of the new technological developments coming to the team fit well into the current technology. <p><i>Application</i></p> <ol style="list-style-type: none"> 7. It is easy to adapt our work to make use of the new technical knowledge made available to us. 8. New technical knowledge can be quickly applied to our work. 9. My customers can immediately benefit from new technical knowledge learned in the team.
Lichtenthaler (2009)	The definition and the model proposed by Lane et al (2006) are used. Measurements are defined related to an innovation study in a firm context.	<p>Exploratory Learning</p> <p><i>Recognize</i></p> <ol style="list-style-type: none"> 1. We frequently scan the environment for new technologies. 2. We thoroughly observe technological trends. 3. We observe in detail external sources of new technologies.

		<p>4. We thoroughly collect industry information.</p> <p>5. We have information on the state-of-the-art of external technologies.</p> <p><i>Assimilate</i></p> <p>6. We frequently acquire technologies from external sources.</p> <p>7. We periodically organize special meetings with external partners to acquire new technologies.</p> <p>8. Employees regularly approach external institutions to acquire technological knowledge.</p> <p>9. We often transfer technological knowledge to our firm in response to technology acquisition opportunities.</p> <p>Transformative Learning</p> <p><i>Maintain</i></p> <p>10. We thoroughly maintain relevant knowledge over time.</p> <p>11. Employees store technological knowledge for future reference.</p> <p>12. We communicate relevant knowledge across the units of our firm.</p> <p>13. Knowledge management is functioning well in our company.</p> <p><i>Reactivate</i></p> <p>14. When recognizing a business opportunity, we can quickly rely on our existing knowledge.</p> <p>15. We are proficient in reactivating existing knowledge for new uses.</p> <p>16. We quickly analyse and interpret changing market demands for our technologies.</p> <p>17. New opportunities to serve our customers with existing technologies are quickly understood.</p> <p>Exploitative Learning</p> <p><i>Transmute</i></p> <p>18. We are proficient in transforming technological knowledge into new products.</p> <p>19. We regularly match new technologies with ideas for new products.</p> <p>20. We quickly recognize the usefulness of new technological knowledge for existing knowledge.</p> <p>21. Our employees are capable of sharing their expertise to develop new products.</p> <p><i>Apply</i></p> <p>22. We regularly apply technologies in new products.</p> <p>23. We constantly consider how to better exploit technologies.</p> <p>24. We easily implement technologies in new products.</p> <p>25. It is well known who can best exploit new technologies inside our firm.</p>
Flatten et al	developed multidimensional	<i>Acquisition</i>

(2011b)	<p>measurements of absorptive capacity in a firm context. This study was initiated by a qualitative approach and finished by quantitative analyses. The measurements were based on relevant prior literature, a series of pre-tests and two large survey-based studies of German companies.</p>	<ol style="list-style-type: none"> 1. The search for relevant information concerning our industry is every-day business in our company. 2. Our management motivates the employees to use information sources within our industry. 3. Our management expects that the employees deal with information beyond our industry. <p><i>Assimilation</i></p> <ol style="list-style-type: none"> 4. In our company ideas and concepts are communicated cross-departmental. 5. Our management emphasizes cross-departmental support to solve problems. 6. In our company there is a quick information flow, e.g. if a business unit obtains important information it communicates this information promptly to all other business units or departments. 7. Our management demands periodical cross-departmental meetings to interchange new developments, problems and achievements. <p><i>Transformation</i></p> <ol style="list-style-type: none"> 8. Our employees have the ability to structure and to use collected knowledge. 9. Our employees are used to absorb new knowledge as well as to prepare it for further purposes and to make it available. 10. Our employees successfully link existing knowledge with new insight. 11. Our employees are able to apply new knowledge in their practical work. <p><i>Exploitation</i></p> <ol style="list-style-type: none"> 12. Our management supports the development of prototypes 13. Our company regularly reconsiders technologies and adapts them accordant to new knowledge 14. Our company has the ability to work more effective by adopting new technologies.
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Appendix II: Interview 1 - with the board chair

A: How much time do you think you have? Then I will try to fit in with that?

IO: No, well, I have just got a lot to do, so here, so, I have a lot to do before people leave work, so..

A: I understand, right? The sooner, the better.

IO: Yes, the sooner the better, mhm.

A: Have you got a watch?

IO: Just on the phone. Just what you plan to do then?

A: Go into this board, mainly.

IO: This board, yes. This board.

A: Yes, or the board where you were sitting.

IO: Yes

A: Then we start. I thought of using some of the concrete situations we have seen the last few years related to Healthy, for in that way to come down in this subject, which I have explained a bit - how this flows of knowledge and information were. I was thinking first to talk a bit about the conflicts related to the hospital - it is quite obvious to start there. It has been a huge and heavy and claiming process related to the reorganisation of the Oslo hospitals, and pretty many activities around hospital A among other things. I intend to ask you how you think the information and the knowledge gathering have developed in this period?

IO: Well, you cannot avoid looking at this compared with the way, well, what we define as our role.

A: Yes, but this is really interesting - then we start there.

IO: Eh, because the question of what our role is, and what tasks the daughters (i.e. daughter companies) have got, typically mean something for what knowledge is relevant, or it is anyway relevant, it is not about that, but more about which knowledge is central.

A: Agree.

IO: So then, so, to which degree we are to have a comprehensive information, or there are lots of things happening at the hospitals, which are not especially central for us to know, because hospital A is the correct address for this, we need to know more a sort of main trends, main conclusions, because what we are going to put it on the edge, is saying if we all the time have got our trust towards the sitting local board, and the base, the invitation to in case change the commission they get or have got, and in the allotment of budget money. And about the flow of information, then this one actually moves by, there are actually several channels, well, the primary one is what we get via the CEO, and there we have actually got status reports

announced from Hospital A every single, at every single meeting. And I do not know if I.. I have got this at every single meeting. And the management has got this every single month, so I think if there is anything emergent, then there is in our expectation of, the management in Healthy that they in case raised this more emergently in the first turn with me.

A: Yes, exactly. You are the chair.

IO: In the first turn with me if it was meant to, if this means that we should do something special on some of this areas. So, this is type of the information we have got, we have got special monthly reports and we have got tertiary reports, which are the main reports, where also a long row of parameters and economy are included. And we have got the more informal information coming by the follow-up meetings the management arranges with hospital A, which again gives birth to knowledge of them and improves the contact with me. Yes, it is the intention that they are following them continuously, but because there is a basic thinking to in case do something when things are like that, in case.. and then of course, like other issues, it is not so that the board only receives information through the union representatives, it is flowing towards the board through other board members having different sorts of contacts - if they are not a source of information, then they from time to time are at least a starter in giving the board a question - the starter to sort out what things are like.

A: How is this information sorted? All information is probably not coming through to the board to the same degree? Well, a part of what is coming from the hospital level; it will probably end in the management if the management does not think this is relevant to you. And when you then are sitting as the board chair and have got this important and touchy position, then you will automatically emphasise differently, may be dependent on the case, about what is coming from other board members, what is coming from the union representatives' point of view, and how these things are to be put together. I was on the net looking at the law for the health companies, and this word "college" is actually very central there. And I am a bit.. I could like you to explain how you use or think that the concept "college" is utilised in the board where you are chairing?

IO: I have not thought about this board as especially different from other boards. A board is actually always a college, so with me there has never been any doubt that it is the board as a college being responsible, it is the board as a college making decisions. So, what I have been aware of in my role is having a good feeling and knowledge of how the board as a group thinks, reacts, considers, asking around this, and thus be the messenger of the probable perception or requests towards the management.

A: Yes, so you have got a role of information and knowledge between in a way the board and the CEO - at least between the board meetings?

IO: Yes, I will say so. In that sense that I am good in reading the board, which is important because, that is what I use in the consideration of which items to be put forward/ not to be, which items and the information to go through and not. And in.. But, of course there I am using.. This will be a sort of point of connection, so I use the information I get from the management, this one I will in a way have to level with my observation of the experiences in

the board. So if the CEO says that "now has this and this happened, how do you think we are going to handle this?", then is actually, the consideration I am then doing is not what I personally think. The answer to this is what I think is right knowing how the board would think about this. Do I know that person F. will be very much engaged in this, or person S. The CEO will be..., right? And this is a partly how I work with what is meant to be the feedbacks towards the CEO.

A: Interesting - this term "to read the board", because I use this in other contexts. To read the situation, or whatever it might be. And when you read the board, to go on with you - do you mainly do this during the meetings? Based on what they say, or is this more based on the knowledge you have got from the past, and you know what traditionally is the positioning of the single board members?

IO: No, this is a combination, yes. It is the spinal.. I talked with my son yesterday at the latest about it, just like, as, hehe, personal differences between the ones who are arguing through everything, compared to the ones who are more scanning themselves to a stance. And when you are scanning yourself to a stance, it is because you use several senses at the same time.

A: Then you have opened all the "drawers" in your brain, I usually say.

IO: Yes, yes. That is why I cannot answer what is what.

A: No, no. What I was thinking about with the college which we have not touched, is what the law is extending a bit, that the college together is to be combined in a way that they represent an higher competence, and they are meant to share the competence with each other, so the board as a whole, as a college becomes, has a very good and strong competence. How do you experience that this works?

IO: Eh, both yes and no. It is actually put together quite continuously, so you will have several pretty unlike input to the situation round the table after all, because people are coming from different places. So you can say what might be, what is a limitation in this system compared with other systems, or boards, or other boards when they are really on their best, is that the combination of the number of persons and openness at open meetings make in a way the dialogical development in the board harder to make than it is in a smaller board. But, inside these frames, then I actually think that we have made this better than, yes pretty well, actually. Because there has become a mood in the board, making that there all the time has been an issue of finding together and finding common solutions, and in this in a way it is a rule that we all have to listen to each other and adjust a bit... and things like that. But we could have managed that as well. But this is something which mainly works when you have got a proposal for the decision and are going to sort it out. Using the board in a way to develop something new, it's hard. Such a big organisation, and such a big board, open meetings and not at least that many items which in a way have go there, and they are about big issues, with an additional possibility to work with development and good ideas. Then you can say, the agenda has been so filled up that the room measured by capacity, for the organisation which is going to work this through as well, has been on a minimum for actually doing something else additionally. The issue would probably now have been more to be able to sharpen more.

A: I understand. Because this is obviously a special and demanding place. But would you ideally wanted a smaller board in such a context?

IO: Eh, yes, I would probably do! Not a lot smaller, because a sort of representation is needed. But I think 16 are too much. Mhm.

A: There are probably other ones thinking that way. But, I note that you have got a pretty high number of strategic processes and you are almost an example for teaching in having main goals, decisions, and the management should follow what is decided, and you expect the reports back. And I notice at the latest yesterday that you had got the case about psychiatry and somatic nurses in hospital V., and then with the explanation why several persons said they wanted to vote unanimously, obviously based on information from two boards downwards that they wanted to do so, and then the case stayed there, so then they took it up there. You do not experience that this can be a sort of "putting sand on"? That you trust each other, and that things are lying a bit balancing? Do you understand what I mean?

IO: Yes, yes, but I actually think I would rather say the main problem in this world has to be the actors who reconsider and reconsider and reconsider, and that that has an incredible negative effect on time as well as the bureaucracy and on everything and take the focus away to obtain that the responsibility is as far out there as possible, I think this commonly is the best. And then you of course have to draw up where there are more principals, where there is a reason for a total principle. And that is where we are searching all the time. And on some point then there is obviously in a way a reason for discussion forward about where the level.. Well, I know that among other things someone in the board is very much concentrated on the balance between what should be common staff political rules for all the hospitals and how much should be decided locally. And that is a discussion of principals. How important is it having things in the same way for all the nurses in Healthy. But if you are first doing this, drawing it closer, then it will be more important placing it at a level where it, well, do not moves longer than what we principally think is correct - that we do not start "making rules for wearing jewelleries at surgeries" to the main board.

A: Not to mention maternity leave which are to be accepted?

IO: True. It is a bit like that.

A: No, that is not where you are. But do you experience that this is an organisation where the board chair or the CEO is almost sitting holding a bit to assure that it does not turn wrong, with reference to what you say about all these persons popping up here and there?

IO. The fact that this claims a continuous awareness with CEO, board chair and the board about what is our role, and what is the health companies' role, there is no doubt. There are a lot of single persons who like to mean something on this. And then you in a way have to put it forward and all the time think what is the principal reason why we are better equipped to make that decision than the board in V. (local board)? In a way you will all the time have to look after staying in the discussion and not just jumping directly into the reality, either you are pro or contra.

A: Tempting to lift your arms and clean up instead..

IO: Yes, and this will in a way be wrong. And we had several of this sort of discussions in the beginning. So when you are coming now observing this, then it is also a result of a discussion which has walked around earlier, and which absolutely has to be done once more if there will be larger exchanges in the board.

A: A keyword is probably actually the ownership. That the persons from a full point of view own the role they have got, have got it "under the skin" and have a relationship to this one - that they are not just sitting there because someone has placed them there. But I would like to go back to the organisation and the structure. You are among other things speaking about hospital A and some other places where it is a bit of the same that the management has got the dialogue with the hospital both as a leader and as an administrative. Isn't it like this? It is not the board and the board chair doing this?

IO: Well, the business meeting is about me being, or me having.

A: And that is the whole meeting, or?

IO: It is the board chair in Healthy who is the business meeting for the subordinated units. There is thus a direct line from the board in Healthy to the boards on the subordinated levels. And you could... In the other regions they have a bit, well, with us, it is in a way decided that it is like that; it is the CEO who practically has got the daily contact and so on. But in other regions they have done it slightly different, I think that in region M., at least it was so, when they had a meeting with the regional boards, then there was in a way some parts conducted by the board chair and some parts conducted by the CEO, and in region V., the chair has. in a way been the leader of this, mainly, when it was about the board out there. Ehm, and you can argue both ways. I have been clear that what I and the CEO, eh, decided is that the dialogue which is continuous, it is informal, advising. There is never about any instruction. At the moment when it is about an instruction, then it is the business meeting, and then I am the one who will be there.

A: But how does this work if an emergency comes up; big or small; maybe mainly big in this context. Does it mean that you will be present?

IO: Then, if an emergency appears, then the CEO will raise this towards me.

A: Yes, exactly, and then you will normally? Give instructions via the CEO?

IO: No, I have actually no allowance of giving instructions; the board has to do it.

A: The instruction you are giving will be a process leading one then?

IO: Yes, and then will normally, then things will practically be that we are discussing what is a good idea and what is not, and then there is a dialogue with the hospital out there. And this is actually just if things are put on the edge, that the hospital does not, or the local health company out there, that we after a discussion do not agree on what to do. And we mean in a

way in such cases that something has to be done differently from what they want themselves. Then they would probably have called for an extraordinary business meeting.

A: Has this happened?

IO: Eh, yes, but not directly that emergent, that tomorrow.. in a way.. But we have had an extraordinary business meeting regarding an imposition to the S. Hospital on, yes, it was actually quite emergently related to that they intended to sell. Eh, yes, well, it is something with IT. And we had an extraordinary business meeting at hospital V.V. related to the follow-up. Well, at a time we were unsure about how proper the follow-up of this case was, and then we had an extraordinary business meeting, too. Yes, so, this was..

A: Yes, but do you think that the dialogue between the main board and these local boards -, it is a huge system, is optimal in the way they are? Or would it have been better with a slightly closer contact at the board level here? There is always a challenge moving from the political level to a sort of an administrative level, and the opposite.

IO: Yes, well, I think you can say that in all concerns you will ideally want you could understand and saw more of each other and thus understood the reasons why they did that thing and they did that thing. Ehm, but this activity is limited by the board members, since this is actual spare time activities, to say it that way, at both levels. So, I actually think that increasing the contact between the management in Healthy and the local board and the management out there, I think this practically works to the same degree as far as there is a frequent contact between the boards because the CEO presents and knows the stand and the opinions in the board of Healthy and the reason for our decisions. And her possibility based on the time consume, yes, especially time consume and based on her working position, of conveying and having a dialogue with regard to the things, this is probably bigger and better than if you are to use direct meetings, board seminars and things like that. But for the CEO as well this is a consideration between the time used here and time used there, but there has always been an aim, almost said, that she is more out in the local health companies. Then we have got, not just as an ambition, but we have worked it through as well, that she and I have been around outside. Yes, I am with her, and then in a way the goal has been that we manage to be in all the boards at a seminar for two-three hours, during a period of one till two years - two - three boards a semester.

A: When things are becoming emergent and fast, not based on health, but on economy, to move towards the economy here, then you have got the role that you have kept the economy you have got and tried to leave as much as possible of it to the local units for solving the problems. This is what it looks like from outside. But, when you and the rest of the board are considering here, because I know you are considering all the time, I suppose, from whom are you mainly getting the backing? Is it the management? Are there other ones? What is the relationship between the management and the union representatives compared to each other as an example? They might often have different points of view here. The users? Where do you collect the information and the knowledge in such a context?

IO: This is in a way not that, well, in a way then it is actually difficult, and in another way it is not that difficult. Because there is actually, you can say that the allotment we do is primarily based on an allotment which has to be right related to the population's needs more than being related to how the hospitals traditionally have found out how they are doing this and how they traditionally use money. Thus we have, well you ask on what we have actually have been leaning. Yes, we have leant on the same ones who have worked with a, how to mention, fair allotment of the health money of hospitals on the national level, we have this with us.

A: Mm, and then you are speaking about?

IO: H. and what is the other one called then? Hmm.

A: Yes, in the management, actually?

IO: No, no. They are university people, having made...

A: Yes, university people, yes. Who are used as external competence persons actually?

IO: ..To make an allotment model based on the most correct criteria based on covering the needs, the way that the ones in region Ø. have the same amount of money for hospitals, based on their defined needs in region Ø.

A: Yes, because these key numbers are actually not easy to find.

IO: Ehh, no. And the system Healthy uses, is actually the same system as we use nationally, but with some minor adoptions since we are slightly different. And then it is of course a bit like such additional questions which we have to, where I actually do not experience that there is such a big need for leaning on someone. This will be a sort of combination of the management and the reports from the managements' meetings and things like that. Well, listening to what the hospitals say about how much do we keep, and how much is allotted out. And there is at least my starting point, and the board's starting point has been, that we want to allot out as much as possible and keep what we think is necessary to keep centrally. Because there are central activities as building up the full it-system, standards, common infrastructure and things like that.

A: When I am listening to you now, I hear that your description of this, is that this is a well-organised, structured organisation where there is a reason why things are as they are, and where you have to work on all the time to make it stand as it is, because this is a very demanding sector where we are. This is almost what I hear.

IO: Yes, but I think you are right. Well, I probably mean so. But, then people may say that it is self-defence.

A: I am just observing.

IO. Yes, yes, and that is what we of course have to handle, but that there is something like that. But I probably mean, and I have been in several other sectors and areas. I mean that this is well considered, structured and professionally organised. Yes, I really think it is. Simply.

A: I can see that! The structure is, in my head, like a teaching book as I have characterised it on a few occasions.

IO: Then you might say that what in a way then still are the issue is that it is “far away” going out there, well, one thing is the most outer island, and another is the most inner doctor at the S. hospital. Well, it is. And especially when you connect it to the sort of profession and they sort of self-authority as they have. And then, too, you can say that..

A: Yes, we have actually seen that.

IO: Yes, you have seen some of that. Then you can say that, when a crash is appearing, then the structure is wrong, but, well, yes, that is not sure. Well, look at, actually, it is clear that the health sector is different than the university sector, but if you in a way look at what degree of development and change ability the health sector after all has managed through a relatively short time, despite having much of the same issues as the university, then you might better say that this has been surprisingly successful. We have actually managed to do quite a lot, despite that it is incredible difficult, originally looked on as a difficult sector and persons. Well, not difficult persons.

A: No, but they are organisationally strong persons, and many persons who are used to be heard.

IO:.. and do what they want.

A: Yes, and it might sometimes be easier getting forgiveness than approval. So, putting the finger to the ground, then I am not saying here that this does not work. But, nevertheless, then asking the contra question: Could you have done things different too, as an example avoid the problems you are meeting now?

IO: Well, there will always be. There is absolutely a "forest" of single points which should have been done differently. But it becomes like that as soon as you, and that is a bit at different levels, well, easy to me sitting here saying that the board and the CEO at hospital A. should have done it that way instead of that one, and you should have been out speaking with the persons and.. Things will easily be a bit like that, it is easy saying when you have not been sitting there.

A: It always is.

IO: Yes. And then you can say that the whole way of making decisions of the fusion, firstly we should have taken all the three hospitals instead of just the two. Well, but I have in a way no reason to judge if that would have turned out any better.

A: No, we actually have not.

IO: No, so today I am not sitting thinking that "God, we should have done it like that instead". I don't. I think that here things are about” keeping the teeth strong together” and make it done. And then I think, I think that there are some things there and there and there and there which would have made it easier to.. Right, there have been some of those unlucky circumstances.

And it is something about communication, not at least the communication with the employees, communication with the hospitals. Well, there are some of that kind of things which I, which obviously could have been better. But, just structurally, I am not sitting thinking that we should have done it differently.

A: No. Good. What do you think about the communication with the employees? Do you think it works well? In the board?

IO: In our board I think it does. There I think it works well. And then I know that often they, well, complain that they do not think they have enough time in front of the board meetings with their preparations and the minutes, well, that is a bit of that discontent around which is also about how much time the CEO succeeds in offering, and sometimes not just the CEO, but also some of her subordinates, and things like that. But everything put together, I experience that at the concern level it works pretty..., it works well, and that there is an enormous fundamental mutual respect. And that in the board, with the employee elected members, this works well. On the other hand, to the degree that it does not work well in the other boards, then it is about that they are too dominating. And that some board members who are not employees think that they are dominating too much.

A: Yes, I can understand that. Because there is not the enormous need for having the word and discuss in all the cases in the board, right?

IO: No.

A: I observed, and that was something which surprised me. The tradition you have got to work towards a consensus. I registered that quickly, and this is obviously a philosophy you have got, that this is important. Is it like that?

IO: Yes.

A: Because?

IO: No, because I think that, yes, well, this is twofold. You think that the decisions have more power when they are unanimous - that was probably the most important. But it is probably also founded in, well, a personality trait that the decision probably simply is becoming better. If we have agreed, and you have a genuine believe that going on discussing things makes us ending with something which, when everyone agrees, then it is probably more correct, then it might be a better decision than what was first laid there. And then it is wrong, well, from time to time, then it is simply about that we disagree, and then the plural has to win. And there I am sure I have... I have a few examples that I have let things go a bit too long then. In my hope of making an agreement, I have been a bit too optimistic and then we have thrown away time, but, so what?

A: It has to be like that. Has it ever happened during the period you were sitting in the board that the board has been really, really disagreeing, either at an open or a closed meeting, about where to go, and more essential things than a single item, or a single principle?

IO: Eh, well. There have been some stupid things about some sizes of boards and things like that, well that kind of things. But, otherwise, I will probably say that it has not been. It is,,. Just the way of working has made that things to a limited degree were put on the edge. Because items where we know we have.., which are difficult, there we have gone through several times. Discussed once, then had another discussion, yes. Searched for solutions.

A: You are simply maturing?

IO: Yes. And in a way found the way around it, either round it or through it - depending. So, I cannot remember now. No, well, we actually had the case of, but I do not know what has happened with that one now in the end, but about vascular surgery. Of course, if we there and then triumphed, well if that one had been put on the edge in the December meeting, then there would have been a disagreement - a clear plural to the minor. But it was actually exactly to avoid it that another attempt was made. And you can say, this is also about that it is not just a question about what the board has, almost said, then heal the wounds or have the board collected again. But this is about, when there is an agreement in the board, and then there is often, yes, a foundation much further out, too. So if you are just cutting the edge, when there is a forest of people being annoyed? And then it is often difficult to have it followed up, too. But you have actually got an example, and that is an opposite example, it was about hospital T. and hospital V., if there should be two hospitals or if they should be merged or not. And there was obviously no doubt that it was ideally a plural to have them merged. But you would have got someone voting against. And in case, then you had got the whole geography out there against it. So this was a kind of consideration of what is in the end the clever way? What is clever in the end to move forward as far as possible during the shortest time? It might be better taking care now, and then do this later on.

A: Right. Because there the culture is coming in, if I move to be somewhat local. The county line between county V. and county T. is traditionally "very high". I think this is easier related to county B. and the opposite way. It is actually interesting, but it is a totally different context than where we now are. Back again. I will see if I can finale this. You have been good in giving lots of information, so this is very good. Do you think that the board becomes too weak in Healthy related to the management? Inside and outside the board meetings?

IO: Ehm. To answer the last thing first - outside. This has been a totally knowingly choice; it comes from me then, because it is actually me who in case will be the speaker of the board. And it has been a knowing choice in the way that I think that it in a way is more correct that the CEO, who is there every single day, is the one who primarily is the outwards one. And it is in these situations where there is, there is something being put on the edge regarding the trust of the CEO, regarding, yes and so further, that the board and the board chair have to enter the arena. And that - if this had been done the opposite way, especially in a sector like this one where you in a way almost can cannibalise the board and the board chair, then you would, I would have reduced the CEO's authority. This would just have been an accident for everyone, and it would have claimed me to work much more with it than I already did, and it would in a way be a wrong allotment of roles. So, even if I can understand, well, based on the fact that someone has a sort of image that it is a political board, and not at least because the

board chair in all regions has one or another kind of political, well, not everyone, but at least one or another kind of political affiliation, then it will from outside and without reflection be a bit "oh, why?". But I agree that it is very important. And it is actually made so that the board in the region - has no political function. The minister has got this, and it would actually just contribute to a bigger confuse if we had got a sort of medium political.. - something coming up politically between the minister and the region as could easily have been happening then.

A: Yes, I am not thinking politically related to health. I am thinking more of the operations, because the main goals will actually be transferred from the minister.

IO: Mhm, yes, but outside. The drift outside, yes what do you mean then? Well, there are very few things which would be actual for expressing or attacking or defending Healthy which is not put into a political context.

A: Yes, but if you think a bit the opposite way, then. In the situation where they are now, without me making this to a huge drama, because this is neither my role nor my place to do it, or my experience to do it. But, when we now hear as an example, that we do not think this works, things are not sorted out, there are mistrust here and there and then the CEO is the one coming forward, and not the board chair. While in private sector as well, and then it is quite often the board chair that leaves with or without the CEO if a crisis is coming up in the end, and here is actually, there is no one who has called for the name of the board in this context. I have been thinking about that.

IO: Yes, but this would probably, depending a bit on where we are in the process, there will actually be a situation where there really started to be noise or fighting or signals that we had to do something, then the board would obviously has been there at once. There is actually no doubt. So when they are not there now, then it is a part of the answer that the CEO has the trust from both the board and the minister, and thus they let an outside case be coming and leaving in a way. and when you had got the whole patient hotel case, then it was also the board, but that was actually also because this was directly linked to a board decision we had made, and then it is of course the board who has to be there as well. About hospital G. there has been questions, there I have had to answer more around it, exactly because it is related to a board decision. so I, ehm, yes, anyway such towards the question. I heard the question of who is most viewable. Then it has been absolutely conscious, and I mean it is right that it is the CEO who is the viewable one, primarily the viewable one, without meaning that the board has not to be on the arena from time to time. From time to time some other persons have to go out.

When it is about the internal, so ehh. In a way I think that it is a bit like what the evil and heavy want to argue that the board is just doing what the management says, and then I firstly think, this is not like that. Second, I think that they then are asking for having a worse management, so the board is to have more space, actually in a way to show up. So, eh, I think that Healthy is lucky having such a competent and listening management. And that makes me, I am at least thinking that the communication, the dialogue between the CEO and me, and I mean as well that my ability of reading the board has been that good, and the minister for that case - that my translation competence has contributed to the fact that there have often been

good matches then compared to what they have suggested, and what the management has suggested and done. Eh. And I do not doubt that if something had come up which the board did not like, then there is no doubt that the board would have been answering that we do not like this. And there have been in a way examples of that. Well, not any examples of "we do not like this", but in a way signals from the board. But I. The management is also listening, and has a good feeling in their fingers themselves, so you do not need in a way to make a lot of fuss to make them understand.

A: I actually observed.

IO: Yes, so I, yes. So thus, so, if you just in a way read papers and how often have, in a way the CEO and so on... It becomes in a way wrong. It is simply a wrong source, because this is a much more complicated cooperation than so. But, then it is of course a reality that when someone has so much competence and overview and abilities of communication as the CEO has, then she has an ability of convincing the board. Yes, it is like that.

A: But then you have to count on the fact that the board has such a strong competence that they manage to handle if they do not agree.

IO: Yes. But that she with her competence has a better ability of convincing the board than another director, I believe. But, at the same time, we had XX in our mind, and it is clear the he had a totally different..., but there was actually no doubt that he had an authority in the board, as well.

A: In the end, then: Should there have been more time available for the board members, giving the board more time to participate in the board? A higher amount of free time or part time work, or whatever? This is a big and important decision?

IO: Eh, yes, yes, well, it is so. So, in a way it is easy saying yes. But on the other hand, I do not know how much that helps, well, right, part time it is - if you are doing that then it ends up with - then you need to have persons who have the possibility of doing part time. Ehm, so it is not in a way that easy. And buying available time, you might say that this might be fair at one or another level. The responsibility in the board work compared with other boards means that they should earn more money, but first I do not think this is the prime motivation, and second, this unfairness exist all over in the public sector, so I do not know exactly how much it would be a help. It becomes a bit of a strange question. I will be happy to think we could have a better payment, and that the possibilities of buying free time could be better, in case for the ones having the possibility of doing it. Having refunded a bit more lost working income and things like that, so the arrangements were better for the ones who had the possibility of using this. But, in real, it is not that easy doing something with these things, and making them all full time working persons as an example would have been totally meaningless.

A: Yes, yes, yes. It was probably not about that. I was more thinking about the use of time, not the payment. I do not know anything about this, but for them to have a bit more time available. It is obvious that this is time consuming.

IO: Yes, it is. And there is nothing.. It is of course incoherence that when it is about the board chairs so - none of the board chairs has a full job. All of them have different kinds of free consultant activities.

A: Yes, so that they can make a combination in a way.

IO: Yes, and right, the idea of having got this in addition to a full job, that is not easy.

A: The consequence of you going here then?

IO: Yes, then there was a bit of such incompatibility in addition then, but.

A: Yes. Yes.

IO: Anyway I would not have.

A: No, but I think it is time to thank you. It was really nice to get the opportunity of having this information from the chair. I was a bit worried if I could not get in touch with anyone in the leadership at all.

Appendix III: Interview 2 - with the union representative

A: Then we are starting up with the part of the interview from the questionnaire, and which is based on an open dialogue around various issues related to Healthy, their management and the governance structure there. So, we start up this dialogue, and then we will see where we are going. I planned to start with a bit of a special situation, or it is not that special any more as it should have been, well, these economic challenges Healthy has got at the moment, and which have been there for a while, creating issues on all levels and may be also some noise from time to time. There has been a discussion of economy and problems going on, and I wonder a bit, how do you think your role has been here? How many suggestions and how much information have you got, and from where have you them?

IO: Now you want me to speak as a board member, or as?

A: I want you to speak as yourself, and if you are changing your "hat", you can always tell me.

IO: Now, I have been present at a number of board meetings, I am not sitting as a board member longer, or yet, which means that I have been sitting behind. I think the board receives too less information of the challenges existing in the local health companies, or in Healthy in general, and now we have been working a bit with this among, well, among us being union representatives or vice members of the board in front of the last board meeting, and then succeeded in adding a sentence that we want a more thorough analysis of the situation. What I experienced was that the board at their last meeting was quite frustrated. This came through in different ways, but among other things as an attack on a person, which was quite special...

A: Inside the board, or related to?

IO: At an open board meeting, towards one of the board members, what they meant was so concrete that if this person did not want to follow the decision, he could actually leave the board.

A: That is quite special, yes.

IO: Yes, and I experienced that this was an expression of a huge frustration.

A: Was this about a general board member, or a..?

IO: This was a union representative. And I can partly understand why the critique is coming, since it is about which position you take, and when you then do not argue from your position, then it becomes for the hard rest to handle, at the same time I am thinking that this is an expression of a huge frustration, and I think that the board is feeling pretty powerless in the situation, because first; they do not get all the information they actually need, and second, then they have limited possibilities of making any concrete influences.

A: But then I am stopping up a bit, and then I ask why they do not get this information - where is the missing link?

IO: No, the miss is in the management, which means that they are interested in.., and of course there are limits on what detailed level the board should move on to, but when we are in such a situation, then I think it has to be in the interest of the board to provide some slightly more fundamental information of the safeness - at least see that this information is available, so we can start working with this one. Now there are more general ways of writing, where they write in the presentation for the board or the presentation of the facts that actions have been initiated, the situation is handled, several areas are identified, but there is nothing about which areas.

A: Who is the one doing this?

IO: It's the management.

A: The management, yes, mm.

IO: The way that it stops, it turns out to be on a meta level, instead of working down to secure that it can assail it in a different way, they do not manage to assail it, it ends up being a sort of a sack of problems lying in its own bubble, which in a way never, nothing comes outside the bubble, it, well, it becomes not viewable.

A: Where is this bubble, do you think? Lying in the board, below the board, in the management, or.

IO: It is lying in the management as I capture this. It is actually never coming properly up to the board. Then the board becomes a sort of a pro forma case sitting there, and they say something about "yes, we expect that as an example hospital O. abides the budgets, we expect that they redeem related to the reorganisation", but they say nothing about a possible smaller change of the direction, that they have to intensive there, which means they are not as concrete as they should be.

A: So do you think that the board becomes too much of an organ just putting sand on earlier decisions and the suggestions from the management?

IO: Yes, and this is my impression in this, eh.., that a situation has come up outside, under the local board, no under the main board, that one in a way becomes a piece of the puzzle, as where to follow "mother". There are lots of focus on mothers and daughters in this work.

A: and mother is,,?

IO: Mother is the main board, but actually this is not the mother either, since they are actually just sitting doing what the management asks them to do. No, I am mean.

A: Yes, but well, it is OK that you have got your opinion.

IO: And then there are some "daughters" who are dutiful enough doing what mother says without thinking on their own. And we have not got that space for action any more. We have not got the space for action that we in a way have to do what is the best for the single health company, and this is of course some of the structure here as well as in the health company

structure, that we as the top owners have to be sitting and in a way allotting benefits and tasks out to the other ones below, but internal at the hospitals, too, which means that there will be a bit of a fighting between the health companies, won't it? Compared with the functions related to these things? And then the whole case is not that "you have to do it this way", because this is what they should solve on their own, but this opportunity is not given.

A: Because they have not got the economy, or because the signals are not clear?

IO: The signals are not clear, and they have not got the economy either.

A: So they are getting the signals, but there is no correspondence between the signal they receive, and what they practically are able to comply, is this the way you are thinking?

IO: In a way we all become caught where we are, I think. This is not really a proper dialogue. And you may say that things were not better being below the county municipalities or below the government, or whatever they have been below, but you will also discover that if you use more time on this, the success is much higher. The solutions are arising after a while. A good case which has been discussed on several occasions now, is the case on vascular surgery, where they try a statement from the owner, that means there was the medical responsible at hospital S. who came very early in the process saying that one local centre is enough for vascular surgery in Healthy. And that is the starting point where the process starts up, where several local companies are out there having vascular surgery, and then there are a huge amount of protests where we in the end do not manage to agree upon anything, and then the union representatives of the concern are coming out stopping the full process.

A: But shouldn't the level....

IO: This went out everywhere. But when someone stopped it, then it went to hospital S. In that then the union representatives of the concern at S. went through, telling "we are all going to vote against this. This attitude made that they then moved round once more. And they secure a broad involvement, and they also look at what consequences this will give to other hospital environments. Because these different consequences, they are not always included. They go into a clear directive or a mandate and are going to solve it, then they do not look at the full gap here, and they do not include this in their work which results in lots of discontent. Much frustration and this is not creating the common foundation attitudes or the common understanding you need to have to make a cooperation work. Too many fronts are built up. And then they have sent the vascular surgery in the broad process as wanted, this one came back to the board and was presented last time, and you did not hear any protests. This was the way they solved this, and then they actually send it back to the health companies with the message: "Do agree".

A: So you think in a way that they are sending their decisions out without any leading threads and are happy as far as agreement is obtained? Is this where we are?

IO: Well, in this case, the leading threads were pretty clear, but this was a sort of leading threads which were not acceptable.

A: Then this was not the case either.

IO: No. But here we probably saw this as a pretty real case that this was a quite OK way for taking over, but it was not. They underestimate in a way a bit, and you see the same in the hospital A, that they underestimate the potential in the dynamics out there, which means that they fail in relationship to the communication.

A: What is the reason, do you think?

IO: I think that they simply do not take into consideration how many different aspects which are related to the operation of hospitals. Which means; how many different groups of employees are present, how many persons are taking care of the patient treatment. About the full dynamics in a professional circle, this has to be right. The aspect related to grief, which means loss, how overwhelming and how unsafe you might be in such a situation. And this makes you show off. Depending on the culture, and we have probably underevaluated the importance of culture in hospital O. quite considerably, especially in the U. region, because this is the leading one here.

A: Yes, I hear and discover that lots of things are happening around hospital U. But I am sitting trying to draw the pictures you are describing or sketching.

IO: A pretty critical picture.

A: Yes, and I think this actually is very interesting in a research context. Because it does not help me at all just to receive all the nice stories. Then we are not moving forward. We have to look at the full picture. But you make me a bit curious by the way you are talking, I have seen some of these things too, when I have worked myself into this. It seems as there are some platforms here, where you cannot pass, and the main board in a way is a bit unclear, lacking both information and actual knowledge in the actual situations and considerations. Coming from below? At the same time as they do not manage to give messages being clear enough because they do not know the ground level well enough. Do I provoke, or is this you?

IO: Well, I think you are touching something pretty important. The board as it functions today, they have just knowledge about their underlying hospitals and underlying companies, just by numbers. It is just by red or green signs that they know their hospitals, almost mentioned. And I do not think that is good enough, to look after them in a good way. And then this might be an impossible task.

A: This might have been OK if you were in the situation that the operations were stable, and the relationships between the different groups were stable, but it is not like this.

IO: No.

A: And to be a leader in such a situation compared with a situation with steady operation, these are two totally different things. And I have observed when I am speaking round, that there is a very strong confidence from the board to the CEO and the management.

IO: I A, yes.

A: Well, now in Healthy and the CEO?

IO: Yes, yes.

A: And I experience that it seems like the board in a way has its biggest channel of information and knowledge that way, from bottom and up by the CEO. Is this a right or a wrong picture?

IO: No, I think this is absolutely right.

A: So they do not go much around with this information?

IO: No,

A: Do you think this is wrong?

IO: Yes.

A: Where should they have gone?

IO: Eh, I think that a board would have got much, well, we have got board seminars, but they are so big that no real dialogue is coming from there.

A: Is that because so many persons have to be present everywhere?

IO: Yes, Well, I could in a way think that we should secure a dialogue further than to the CEO..

A: It is the function as a CEO we are speaking about.

IO: Eh, but I have not experienced that for example the different working groups in the different health companies have any meetings with the main board. Maybe this could have been a way of securing a better dialogue? It is clear - how demanding should a main board task be, too, this is that part of it. What is it meant to be? Well, I am probably more thinking that if you have got such a position, then it has to entail a work which means this should be demanding more than just reading the papers for the board once a month, be present at the board meetings, and then say what you anyway have to say, and that's it. And then they go home and are staying at home for three weeks until next board meeting, then they do the same once more. To me it would have been almost logical that this had been a full time job, because it is so demanding.

A: Yes. And, sometimes we have discussions at dinner at home, because I become so engaged in this, of course when I am sitting listening, and then when I speak with different persons. And I came in at looked at this board, and was really surprised that I experienced this as a facility.

IO: MM. Yes, and I also experience that as a board member in a health company where I have known the operations very well, about the hospital, about the dynamic, about the culture and the south part has got some problems, but I have never doubted what the reasons are which in

a way make the waves as we do. The conflicts we have got, and they bottom concretely in things, don't they, but I have anyway as a board member presented an enormous knowledge of my own organisation, and experienced that the politicians and the members elected by the owners, they are meeting with a totally different prerequisite, and they actually blindly trust the presentations of the items, because there are their only support, and I understand that, and then they have to work in a different way, and then we have some losses from time to time because what is coming from the highest level of leadership, the management, is so strong, that it is hard for anyone else to make corrections, because you have not got enough time or possibilities of using your energies in an item like that, which is like what we partly do towards the board chair, and then we explain for the board chair on his side, then you might in a way have succeeded, because the board is the clue here as well. And here are the differences between external and internal board chairs coming strongly up. Because the internal local board chairs they have a clear mandate, they have to do as she says. And if you in a way suggest something far away, or something which differs slightly from that, then they have not got the opportunity, and nothing happens.

A: This is a SOS signal then, in this huge organisation, if the leadership is like this.

IO: The leadership is like this, no doubt. And I do like the local board chairs all around, they are fantastic persons, and they do their very best, but the mandate is actually so limited.

A: I could not have been sitting being a local chair and accepted a mandate like this, but someone fights more than other ones.

IO: Well, they do believe in it. They think it is the right thing. And bless them for that.

A: Well, fair enough, but what you in the end have to observe, is if the organisation as a whole is working, and if it is, then OK. I have been sitting thinking that the suggestions from the management for the voting are very long, and with my experience from all my years as a city manager, I am used to the board members picking out word by word to make the sentences in a way they are able to defend, and here lots of sentences just seem to be swallowed. This was one of my first thoughts, what on earth? And then I have been sitting looking at this related relationships, and you are not sitting directly in the board, but between the union representatives and the other ones.

IO: But it is interesting to observe how the union representatives in the boards are working, and of course we have, we all differ a bit in the way we are working. I have got my way of working, and these bastions as LO and YS (labour organisations) they have definitely their way of working. They are also really governed, they are entering the board meetings with completed mandates, so completed notes to the protocol, and with a clear message that they are not allowed to distract from them. So, and it is clear that this also makes things very difficult for the other organisations to cooperate and have consensus, because we do not always totally agree, and we are coming from a Union context, we are probably more aware trying to include our case in the decision. We are doing better by having a controversial decision than a note to the minute, because a note to the minute will never be more than an opinion there and then. So, now we actually delivered notes for the protocol at the concern meeting last

week, and then we also disagreed with LO. LO meant that they could not because..., well, they could not actually participate in any of these, that simple. And this is where we are. And we see that hospital O. absolutely has got the potential of taking another position, and we have usually got another perspective, and it is clear that other local health companies in the region have restructured pretty massively since 2002, every single year, and they are tired, they are. There are such opinions present rounds in the region. At hospital So. as an example, they are still waiting for the two-three hundreds millions which they mean Healthy owns them, since we because of the income distribution have got a wrong amount compared with what we actually should have got. It is clear that if O region is escaping cheaper in this process than what they have done at So, then the noise will be coming. And this perspective we also need to bring in since we are sitting there as representatives for all the local health companies, not just region O. And there is where we in a way slightly principally disagree with LO, who thinks it is absolutely OK to front this one case, and as I said to S.Ø. before that company meeting, that to me, there is no goal of being a populist. That is wrong to me. So, then you have to do what you have to do, but we are running our own race here. So, yes...

A: But do you experience that it is difficult for the union representatives or does it work pretty well thinking of the whole board as a team? Or are there a bit different fronts here?

IO. Among the union representatives?

A: Yes, and the other ones in the board?

IO: Well, I actually experience that we have got smaller problems than other ones, as I say, because we are not governed by our central organisations, and we are there evenly as board members, we experience, and then we have also got a responsibility, and that responsibility is to look at the region, which means, we in a way have to take a regional position. And this does not mean that we always agree with the management, and then it is good to be a union representative for then you can indicate what you mean. But, I do not think it is the best to indicate by protest to every decision which we in a way do not like, every time, this turns out to be a wrong application of our role as board members, and then we will not either have the accept as board members, which I experience that I had totally got when I was sitting in the board at So. I was heard and they valued the knowledge I had got, but I think I administered it cleverly.

A: Yes, since I suppose that is something, well, I have always been interested in trying to make teams in a board, if you then are thinking about a common plan where the members have ownership to what they do. And I think I have got a feeling that this is a bit various. I do not manage totally hearing the way of thinking from a team in these board meetings, I don't, not either on the other side. The question I always use to ask the union representatives is whether they are looking at themselves as the representatives of the employees in the board, or if they are looking at themselves as representatives from the board toward the employees?

IO: Yes, this will usually vary. Hehe.

A: Don't you think so? You see this doubling of the role?

IO: Yes, and this doubled role is challenging, extremely challenging, at the same time as I think there is a space for options here, since you have actually got some, well, you have a knowledge of the organisation which the other board members cannot have. And that is..This gives you extra responsibility, extra options, but it also makes you move easily into conflicts. You may participate in increased activity, which means unpopular decisions, because you see, well, and then you do not need to walk longer than to every health company of today, because we have got different locations, haven't we? All of these are edging internally in a way about resources, prestige and functions and everything, and you find that everywhere. Exceptions may be at region B, and no after a while in region Ø. The solution might be new, big hospitals for everyone?

A: Then they will be big units, which edge between each other.

IO: Yes, yes. And we have far too much great buildings around to do this, and far too less money for that matter, but eh, God, what did I mean to say? Yes, yes, but as a board member you can then be sitting as a board member and simply have to go for a decision because you understand that this is the best for the company as a whole, but you will have a whole location against, won't you? And that is not always nice. Where the personal focus becomes so strong, well, you have actually got, I have got colleagues up there, and who were threatened to death.

A: Yes, this is extreme. The limits here are almost incredible.

IO: Yes, but this also shows how much feelings being involved, and then when things are at that level, I think the paradox grows to me, that we not simply need to work more and better on this, since this is as important as it is.

A: Yes, but how could the board stake differently to obtain, for going back to our starting point, the flow of communication and knowledge, since, this is about holding the knowledge when the decisions are made. This is about importing new information which pops up all the time, both from the organisation and from outside on everything which is going on, and it is about in a way to obtain an ownership and use it. And here things are stopping, there are some plugs in the system, I think.

IO: First, they do not use enough time for this, which means that they just mainly meet at the board meetings, the board seminars are just rarely arranged. This is half a day or an evening or... And yes, we learn to know each other a bit during these periods, and, but there are new combinations of board members every second year, and a new consultation, and some of the same are sitting. It is time consuming working in a new board, too, which means that we in a way almost lose the half of the board period just to learn knowing each other, and at what level do we at all know each other in this main board, I really doubt. I don't experience that the focus on the internal solidarity is strong in the board; I will rather say that this focus is stronger outside. There is not that much to consider, slightly simpler, but, and now I was actually sitting for a quite long time in the board, and I was known well, and did not feel this so strongly after I while, but I remember that in the beginning I remember that I felt it was extra hard, the fact that I met and worked in a system where I did not know anybody so well

that I in a way could have an all right and constructive dialogue. So, no resources.. It is about time and resources, and i think that these issues should have got more attention.

A: Yes. Don't you think that the union representatives could have provided some knowledge from the ground level to the rest of the board?

IO: Absolutely. Yes, yes. Of course the union representatives in the main boards have a unique opportunity of bringing also new things into the board, because we get our input from all the local health companies, and we are catching up with information in actual cases.

A: Yes, but does this information move by the the CEO and up to the board?

IO: No.

A: It moves directly?

IO: Moves directly via the union representatives.

A: And you are presenting in the board meetings.

IO: Then it moves into the board meeting.

A: OK, that way, yes. That is what coming up there, yes.

IO: And the information is coming, we have a cooperative meeting with the management, too, which means the dialogue meeting with the management, and we can present cases, and they present cases there, which make us think once more as an example. But then it is not the board being involved, then it is directly with the management.

A: Yes, then we are back there, again. So in a way you are inside before this happens. Things are in a way happening at an arena below.

IO: But quite often cases are popping up at the board meeting which are not presented in forehand, and where we have not got the possibility of having this dialogue, and the vascular surgery is in a way such an example, that it is a god idea going a walk around with the KTV. It is clever having a walk around with KTV before you in a way do the big changes.

A: But isn't this something about that you have got a right to participate in the decisions which are made, which results in a possibility for you to discuss in forehand?

IO: Yes, sure.

A: ???

IO: No, but it's clear that there is a speed of time in this organisation which is enormous. One of my colleagues should originally be present in a meeting at nine this morning. When she closed her laptop yesterday a quarter past four, then the papers for this meeting had still not arrived, and then she decided last evening.., they had arrived at ten last night, but then she decided that I am not visiting that meeting.

A: No.

IO: I have not any opportunities of preparations. This is probably how the situation often is, and it is often like this related to papers in the board. They should be there at least one week in forehand. The majority does so, but still we have items coming in the night before.

A: So everything is a bit hectic?

IO: Yes and the whole organisation is built up like this. So, sitting here in the meeting, that means getting papers at about 80 pages the night before - that is not unusual. And people are walking the whole day and night round; we can read e-mails which are sent at 3 a.m. Well, everything has become so bad, as the CEO recently said; this has to come to an end.

A: OK, did she then mean for the organisation as well?

IO: Yes, it does not give any sense that we are sitting working for 24 hours in an organisation like this. This is related to the signals we are sending, as well.

A: Yes, because what I am thinking - here we are sitting with a main board, which in a way behaves and perform as a concern board, where the control down in the system is total, and then at least you are now reporting back that it is no like that. And I have got the same impression from other interviews, too. I have tried to ask a bit further, I will walk that way with you as well. I have been focused on how the information from the board should, principally, ideally be seen going down to the ground level, shouldn't it? Should be able to drive downwards in the system, and then the signals from the ground level should in some way manage to drive up to the top. This is the way development should work. But here we have got some platforms where the information stops up.

IO: Yes, well, we have just got the system of the union representatives if we want to secure this information totally. If there is someone who does not get the information in this system, then it is mainly the managers.

A: Yes, but, but, well, then I am asking once more, and that is a bit outside the board, but, well from the CEO and the whole structure downwards? They also have to send this information out and get the reports in return?

IO: Yes, it is like that.

A: But it does not work?

IO: No.

A: No, well, it is just. I think it is interesting to observe - this is a huge region with lots of money - big challenges, and then there is such a gap in the start, but extremely tempting to find out what could actually have been done to make things different, even if this is not my role at the moment.

IO: My personal opinion is that this organisation has become too big. We have not got the overview, we have no possibility of, with the speed of the health care of today as well as in

the community in general, then, we have not got the opportunity going down on that level, where we actually should have been to anchor things, to get the understanding, to obtain common goals, which means: We have defined five goals. I think if I had gone to my department at the hospital in Ar. and asked if they know the five goals, then they had been looking silly at me asking, what are you speaking about now? But if I had been saying, "yes, but do you know that you are going to reduce the numbers of hospital infections"? "Yes, we know". Well, but they do in a way not manage to say: "Yes, we know the five goals - it is absolutely clear, we have heard this on several occasions". Because it is not like that, but single items might in a way be presented. Well, we have been forced to, we have to, we must improve the hygiene, and in a way we have to reduce the number of infections, and we have to send out information. Somebody knows, but it is not a common message driving round in the whole organisation. We have got a sort of isolation between the lags in which things are stopping. We have long time before I came on the main board list, on several occasions been sitting talking with the only leader, the first row leader, and known that I know five to ten times more than you about exactly what is going to happen in your department, since you have not yet been informed.

A: Because it is not moving in that direction?

IO: Because I have been speaking with the director, since I have got a separate link to the director, and I have got the links to the union representatives, but the managers of the single units becomes nothing.

A: Then you are telling me, the fact that the driving system below the CEO, to avoid names, because names are not important, this drive, it does not flow in a proper manner.

IO: This is going to the executive group, but this group in such a big organisation, it is no longer outside, and another point is that we have actually not, well, the local region V.V. wants to reintroduce present managers, and I am originally positive to present management. I think that this in an organisation working for persons, where we are focused on competence and the best way of contribution, where we have lots of pride. I think we lost a lot of these things if we have not got a clear manager who is there for you, who can keep a good communication, and whom you know will bring the issues on to next level if necessary. This contact we have lost totally with the new structure which we have got now, with common management of the clinics covering big geographic areas. I just know that at S. there are 27 Norw. miles between the hospitals. There is no contact. They have no clue what one of the hospitals looks like. Just from Ar. to Kr., which is a distance of 45 min driving, they have no perspectives of the sizes of the hospitals of the other part. Well, we have got employees in Kr., who thinks that the hospital in Ar. has got the same size as the hospital in Fl., and these two hospitals are very, very different. Things like that, which means that we do not know our own organisation, how the full picture is looking. At the same time I also see the danger when having this structure that this local directors, local management, will generate new lag with a clinic management related to them, which results in more walls between groups, just because we have to.

A: States in the state?

IO: Yes, because these things were not sorted out from the very beginning, which means that they just find out that something has to be changed, and then this is a disparate solution, but, but.. If we in a way manage to use this in a rational way down in the organisation, if necessary... Now I am going to, well, this was said, this was communicated in addition to the discussion yesterday, that if we have got a group of directors in an organisation who do not work satisfactorily today, will they then work better if you just move them and give them some other names? Probably not, no...

A: Exactly, then they at least need a steady hand.

IO: Yes, and that is another problem which has been more and more obvious, at least in this organisation, and which I have proceeded directly to the management, and that is the leadership competence which are now disappearing.

A: It disappears?

IO: Yes, we can see that. Lots of persons have quitted. In V.V - there the medical competence is disappearing, because it is a system where you have not got any sort of real power, you have no possibility to impact at your own level, because you are guarded from above, and then other jobs are becoming more interesting, to obtain the possibilities of shape the organisation more based on their own thinking. And yes, on their own philosophy.

A: It is really interesting listening to you, and I am sitting thinking that what I am hearing, then you can confirm if this is actually what you are saying that they have actually made an ambitious system with a structure, but then they discover that this one does not work, at least not in the current situation, and then they are waking up from time to time..

IO: Yes, this is exactly what this is like.

A: And such organisations will never work.

IO: No, I don't think so, and then you get the situations like the ones we have got in O. at the moment. Well, I have pushed on several occasion that the process in O., is yes, it is a huge reorganisation, but it is a completely acceptable reorganisation if they could have done this step by step. They could in a way made a proper logistic plan during some years for the whole process. Instead they have pushed and pushed it forward, this is a matter of honour, isn't it?

A: Yes, to a certain degree...

IO: Yes, yes, and there is so much prestige in managing this process in O., and things are going too fast and over the heads of the single persons, and we feel like run over and that we are not seen. And of course all the protest in O. - we can talk a lot about them and we can also say how we experience them to be different, because we do, but at the same time we in a way have to accept that they simply experience not to be seen. "No one listens to us, no one understands what we mean", isn't it so? The message stops somewhere in one or another corridor, somewhere in this system. And then we end in a situation where we just are sitting down saying "no, this does not work ". And then it's locked, isn't it? I think that actually they

are not able to unlock this situation, they are just accomplishing with power, since they have to succeed, because lot of prestige is included, but if there had been an organisation accepting to use more time, and that is a paradox to me when working ministers are saying that "reorganisation is expensive", while the Health Minister does not want to use a pound for reorganisations. Of course we disagree. We can actually not see how it can be possible to accomplish the processes without extra granting. But we are back to organisations which are exhausted and without motivation, who have no confidence up in the system, and who are just waiting for the next economic....

A: The next nail....?

IO: Yes, isn't it? And we have got nothing. We are in a way sitting left with an organisation without joy, which actually is not productive unless locally, because there they find the issues, because there is the patient they are found of, and we do our very best.

A: But then they have got a huge amount of states in the state?

IO. Yes, we have. Every department is a state in the state at a hospital. If they have not understood this when trying to govern the system, they have got a huge problem.

A: I got the idea just by the very few times I have been at a hospital, how "tall the walls" are round about. But back to something else, what do you think Healthy could have done then in this situation, now or earlier, to move into the right track? Because, we are once more speaking about, to turn back to my subjects, we are speaking about the flows of information, we are speaking about the transformation of knowledge downwards and upwards, and we are here speaking about a dialogue as well.

IO: Mm. I think that, no matter we have to put this process to an end. We are now speaking about O., but this is about every process, when we have come into a situation like this one, and I can say this also because I said the same yesterday. Stopping up, breaking the process, what is this actually about, which aspect, which pieces and elements are founded here? If this process consists of 20 single definable pieces, then we have to go into each of them, and then we have to speak about every single unit, well, we have to find out if we can obtain making a common understanding about every single piece, we have to stop talking about the big picture at the moment, because the big picture does not work. We have to go down at a different level, and some has to do this work. Healthy is in a way, well, and this is also a very special picture of the situation, because instead, which means the union representatives at A., they do not utilize their own leaders any more, well, that have got a confidence to their own management, but they are shooting "mother". They pass their own line, which is extremely interesting.

A: On its own, isn't it?

IO: Yes, because this tells us something about how, how we experience that the main board is doing the instructions. Because the main board is in a way the core of all the bad things, while there are just a few poor directors out there, and in a way do their best for their house, so they become an alliance of.... the golden example is if N.N. had been doing her job, maybe she is

the clue why things have gone that mad, because there was nothing, I do not think there was very much communication between the board and her, to tell it this way. For, if she in a way had been saying/done something than in a way speaking about the big picture, and day 1 and day 2 and day 3, and instead been concentrated on lots of the single elements and their adjustments, yes, then,, maybe H. is not in that situation, but if you are in that situation, and to have it solved, then you have to go down in it.

A: I think this is very important, and I have also been thinking that way, that if the board wants to be responsible for the leadership, and in this big concern they just have to, but to which degree is another discussion, so then someone has to break things up downwards. This was what I was thinking; it should have been broken before things ended as they did. This has obviously not been done.

IO: Yes, yes, and this was what we said at the last board meeting, and I was a pretty active actor just before this happened, well, related to playing up for the other ones, that we have to make the board aware that they need to go down and see their, well, go down and care about the single elements here. They cannot just be sitting at the top level, and just in a way inform that "this is important and we take it as an intelligence". We should actually be a bit proactive as a board.

A: If we now jump a bit away from that situation, maybe we go back here if we have got the time; my watch is not showing the time.

IO: It is half past 11.

A: Ok, have we got some more time?

IO: I have to go for another meeting at 12.

A: Ok, we are moving forward. What was I about to say? Yes, this is about that the board in a way has to be more explicit, and that they have brought themselves into a crisis, then there is something wrong here, based on your full picture? Regarding the dialogue between the board and the other underlying boards? How far should a main board move into a situation like the one we have got at A. at the moment? Should the board back and say, "You just have to move on"? Should the board participate? Should the board participate by their CEO? Have you got any thoughts?

IO: Of course, there is a local board at A., which actually is the one who in a way have to sort out all these things, but when they do not take these actions locally, then I think there should be a part of the main board to see that things are done. It is clear that the main board cannot take actions directly towards A., which is not right.

A: Not, the details, no, no.

IO: No, this is not the intention, but they have to see that things happen, and this is in a way where my objection is, that I do not think that we as a main board are as active as we should have been, to secure that things happen in the units below. In a way they just accept that yes,

they look at this as intelligence or an orientation, and I am fed up by cases just to have the information.

A: Interesting, because I have been sitting thinking about this..

IO: Well, this is a hopeless way of sorting out problems, that we are just informed. To which degree are we then active?

A: Then you are in a way a board sitting..

IO: Yes, they are just passive, leaning back understanding, but well, if we look at the responsibility of a board member of today compared with what we are actually doing, then we do not touch this passive role, I think, and then the board has to be able to become more active. So an approach of all this, could actually have been that we had used more time towards the local boards, well, maybe they should have been meeting each other. In this situation you have A., but at the same time this is not about meeting A. satisfactorily for the full picture, because then all the other boards where the members are following everything which happens, and when the Minister then is able to come out saying on Friday last week, that 300 mill NOK are added, we were about to drive our cars in the wrong direction when we heard this, well, on our way back from the meeting, what is he speaking about here? Was this the subject at the meeting, are they granted in June, yes, they are, it is about the same money. The way of presenting, he has obviously taken self-criticism here. I think that this was not the best thing to do, but...

A: But still...

IO: But still...Eh, there is something about the way of the communication in a system, this is the main priority, and my second thought is the way of involving, or the lack of involvement.

A: Yes, because there is something there. Actually human beings are sitting at the top level, and I have asked this question on several occasion in other interviews, well, I understand that these boards are not able to run around looking after everyone, the different units below, yes, this would have been meaningless, but if there is a huge crisis somewhere, what about indicating that now we care, here we are, and here we listen. Ok, we have not got the money, but just the fact that someone is coming, listening and understanding, I think, no matter that I am not a nurse or at all working in this sector, could in a way maybe, if not solve, at least sketch some solutions..

IO: Yes, and I think that a meeting point in situations like these ones, with the single local board, by the main board, would have been clever, and of course I will not have a job in a main board as a full time job, but that you just use more time than what has been done so far.

A: Hours? In the situations this will be different, or what?

IO: Yes, well, but then in a way to have, have a dialogue with the ones sitting below, and administer the issues they have got, this has to be the first thing, I think, and I am thinking

that this has to be useful for the main board to meet the board below, and not just the director at every single unit.

A: To certain degrees.

IO: Yes, and that can actually make the whole row here responsible.

A: Yes, and it is a sort of chaotic, then, since you have got the main board, and then you have got the CEO, and then you have got the local boards, and then you have got the other CEO's below these boards, well known from the municipality context, and then things will easily jump a bit up and down.

IO: Yes, and now it is mainly like, well, we have got special AD-meetings, and then we have got AD-meetings between AD and the board chairs and main board chair, well, we have some meeting points like these ones, but we have really few meeting points across the levels, so I think probably, well, it could have been one way to go..

A: What about to as an example collecting all the local board chairs then? Together with other board chairs?

IO: Yes, that could have been very interesting, too. This meeting point is neither there, as far as I know.

A: No, I was thinking about this because, well.. If I had been sitting on the top of this organisation, I would have felt that it does not help to have such a narrow focus as I then would have got, and move straight down to the most central ones. We have to care for a good width, and I am about asking question about this. Some information flows which probably are not very strong are moving up and down, but at the same time a really small amount is moving crosswise.

IO: No, and that is of course interesting in the health sector, because we have a flow of information horizontally, while we all are working vertically, and then we need to be lucky if we succeed in touching the axes from time to time, and from experience we know that this is a point where we all struggle. Actually this is an enormous struggle, but as I told St. yesterday, that we in a way have ended in that situation, and I am grieving when I read in the newspaper that a central right side politician comes out telling that 1000 health employees have to be fired in O. This is not the reality. At the same time I am sitting with two reports of concern from C. These letters are open, and thus not secret, where my, he, he, whom I am going to meet, the main union representative, now afterwards, but when you just look at, well, I am going to read a chapter to you/ a segment, because I think this is so concrete and so, well, it gives in a way a more such -- a realistic picture of what are actually the consequences of what we are doing. And A. has got a too big number of the employees, they have got staffs, which are far beyond what we have got in the rest of the region, and that they can go out telling that lives and health of the patients are in danger with the number of employees of today, this is to me totally incredible. Now I am not kind, but then I am also sitting with C because I am in charge of C, and they are simply too few working, they have up till 137% covering and the bed percentage is calculated to a covering of 85%, because that is the norm, and quite

concretely for the patient, this means that the patient is not sufficiently mobilised from the bed, the patients do not become an adequate follow up of feeding observations, reports have been returned about failing cleaning, care, wrong medications, patients who need help do not reach the toilet in time, the bells are not responded, lacking care of mouths, lacking change of napkins, patients cannot be followed to the toilets, medications are given too late, inadequate care of wounds, the patients are not sufficiently observed, serious conditions might develop before they are discovered, patients and their relatives do not get sufficient information, patients who need a talk are not offered a such one. This is a long list. Fundamental nursing is suffering from lacking staff resources, and the consequences are obvious; later bedtimes, poor quality, reduced safety of patients and risk of mistakes and complications. Eh, the employees have got symptoms of stress.

A: I do understand.

IO: They quit, but at the same time hospital O. quits with 600 employees who could have been utilised at hospital A. The doctors deny moving out to hospital A since they want to stay at hospital O, because there is where the research is conducted.

A: Right, typical.

IO: Well, here we have so many problems that..

A: Well, once more, what you are describing is charging for the economy as well if we are looking at the other side here.

IO: Very, very charging, but.

A: Because this is a sort of fire all the way.

IO: Well, outmost we can say that we have a lot of people with a firm salary in hospital O., which means that at hospital A. we have to hire people at a doubled price instead of transferring the ones from hospital O. to hospital A, and this would absolutely have been possible, if we as an example had been moving the whole department.

A: Right, then we could have got a better result for that case.

IO: We have asked about the research, well, OK that O. is the base of research, but research is going on everywhere, and if we had been moving research funds compared to activities, 160000 patients are moved, we have correspondently moved research funds fitting the 760.

A: But they will do that, I suppose.

IO: They have not got the money.

A: Well, I do understand, but well, now, I am starting with circles as I usually have after a while when working with municipalities, and which I am used to being there in spite of the pretty well prepared surface which is the first one to be discovered, but this organisation does need help.

IO: Yes, it does.

A: This has to come from the political level, I suppose. How do you see further possibilities here? We have to come to an end pretty soon even if this was really interesting in my opinion.

IO: Yes, I do not hope I will be listening to myself on the TV news, he, he.

A: You won't. I have been living with the Media for some many years that I do not give anything out which I am not allowed to do.

IO: No, it's clear that this is an organisation in need for help. There is surely competence, which could be used, but I remember at So., then it made lots of noise that they wanted to tie to an advertising agency or a communication agency, but this is about communication and maybe we simply should have got more resources related to communication. How, well, as I also told St. yesterday, that how we should, which means how we have to secure the communication to the degree that we get adequate information in return, which means realistic information, well, an economist, a friend of a friend of mine, read a notice in the newspaper about a decrease in activity at 24%, in a way with the same number of employees as earlier, and life and health are in danger and he could not make this giving any sense, of course, well as soon as you ask, well, are entering the situation, and there is a danger of live and health, right, well, we are creating fear.

A: A little on purpose, to focus.

IO: To have the focus we want, of course, they use a rhetoric which I think is wrong, because when we really need to use this kind of rhetoric, then it has been pre used. Eh, but of course, that a part of our goal as a big, responsible health company, has to be securing safety. Well, we have at present got a more nuanced picture. I do not experience that there is any danger of life and health in A; we are not getting any feedbacks in that direction.

A: But, hasn't this once more got..., does not this show the symptoms that the loyalty is lost?

IO: No, it's not there.

A: And then things like these will appear, and to force persons into loyalty does not work. We cannot put a gun in the back of someone telling him or her to be loyal.

IO: NO, then we have to recreate confidence.

A: Yes, and I think this is the process where the whole board and everyone below have to enter in this case, as far as you tell me.

IO: Yes, yes, and the board members are not active related to this process, except for the few hours they are sitting in the board meetings, and then they just accept to be orientated about the cases. I am not very nice, but I do not think they are doing their job properly, and that, now I managed to say something about this by my persons in the last board meeting, and some of them agreed. But, well, not everyone and everyone think this is the right way to go. And I do not say that I have got all answers.

A: of course not, noone has.

IO: No, but I am on my way, so this is my perspective. So there might be factors I do not see in this picture, and I might be too ambitious related to, on behalf of the main board, in my opinions on what the board members actually have to cover, or on behalf of the board for that case. But it might be me as a person that I mean that if you first should, if we first sacrifice for a case, well, in my opinion you should damned do it properly.

A: Yes, and at least do your very best, and that might be the problem here.

IO: Yes and the board is not able to do its very best as it works today.

A: And then it has to be really hard being the CEO getting everything into her lap.

IO: I do not understand how she is surviving, to be honest.

A: No, because here there should have been, well, I start diagnosing, and that is maybe what I should not do, but well, here there should have been some meetings first for the top level, where they sat down finding out what things are like, and what should be done with some brain storming, and then got things down. As far as that is not opened, things will just go one until it bursts.

IO: And then we have to find out - now they have their weekly meetings with the management, that is, the management is doing things like this, and it is not like what the main board has asked O. to report straight to them. It is not the main board which has done this. The CEO has asked and given the directors at hospital O: a mission, but this came out the wrong way. But it is clear, the main board should not in a way interrupt and tell the director at hospital O. to report to them, but they have to secure that this is actually done, this is in a way the message, and then in a way it does not help to be orientated or take anything into intelligence.

A: It doesn't. I observed, let us end here, some meetings ago, where we had, where it was something about that the waiting time at all hospitals was too long, the reports in the medias were long, then I entered the meeting expecting a huge discussion, there was one from the organisation popping up tell that things were sorted out like this and this and this, and the waiting time was like that and that and that, and then they all took this information into intelligence.

IO: Yes.

A: And this does fit in my picture, so what you are describing, fits well into my organisational experience as far as I can see, so this was interesting, and then this was a sort of a swan song from you, but it was very useful, I'll bring it with me, and thanks for the effort.

IO: Yes, I am just..

A: and then there will be an out filling, Yes, no, this won't hurt you at all, so just relax. So this is very good to me getting different versions as I do. I panicked a bit worried of losing the

chair of the union representatives. It is for some reason..., you were not too happy to meet me, and now I understand why.

IO: Yes, of course my perspective is because I have got the thread of the union representatives with me, right? I am looking at Healthy from another point of view than the politically elected board members will do.

A: Yes, and that's why I wanted so much to include the employees' views, but lots of person backed out, so I thought I have to do this before you disappeared, and I made it, thank you very much.

IO: Yes, it is clear that she just said no, just before she has not got the capacity; felt that it was just too much,

A: and this we just have to respect and I just asked you to participate.

Appendix IV: *Quotes on consensus*

Board Member 1:

- Well, it happens that there are disagreements, but it is not very often because we in a way initially want to make a consensus.
 - I might think that the chair was almost too concerned with finding a compromise instead of just let it be a contradiction.
 - Well, when I have said what I have said now, then this is probably about 10 per cent of the items, where I feel that we in a way area cross how it is to be elected as a good collegium.
 - As far as we feel this as a race which in a way is done to sort out a future organisation, which works or not, then I think we feel that our task is to a large extent supporting the activities which the management makes, and which is built on previous decisions in the board.
 - ..that we don't start to signal as single board members our own opinions – in case – we will have to start looking for other options. If we will drive through such a reorganisation which we have witnessed – it is a huge project..
 - Maybe it is in the large items where our different background becomes more viewable than in the average items.
-

Board member 2:

- that there should be a consensus, so in a way we will not get a voting pro et contra. There has occasionally been, but not for.... I am sure I am not tough enough to do it either
 - there is a massive competence sitting there on the other side together with the management.
 - but mainly our discussions are open, and maybe, well in commercial company boards things are not like that, so this might be strange for some, that we want the consensus.
 - I feel in a way that I have moved to a way of working which has become mine. So I have not been there creating the climate in the board. It was just like that when I arrived. But I am not feeling uncomfortable with it, but I feel that it is hard to have things changed, but I see that things slowly have changed during the one and a half years I have been there within items in which I am engaged, so this is such a process. It has to be so, and it might be right, too. That you in a way do not drive through when there is a small majority, but prefer to wait for half a year, and then you will have the agreement.
 - But these have been items coming one by one, and then you justify them eventually, instead of making a quick change, which might be positive.
-

Union representative:

- I have got my way of working, and these bastions as LO and YS they have definitely their way of working. They are also really governed, they are entering the board meetings with completed mandates, so completed notes to the protocol, and with a clear message that they are not allowed to distract from them. So, and it is clear that this also makes things very difficult for the other organisations to cooperate and have consensus, because we do not always totally agree, and we coming from a Union context, we are probably more aware trying to include our item in the decision. We are doing better by having a controversial decision than a note to the protocol, because a note to the protocol will never be more than an opinion there and then.
-

Users' representative:

- they use a lot of time to agree. And I think it might be, be a bit wrong to show that they agree so much, too. Because with the health system we have got, the way it is built, and a lot of reports in the media like what it is, so I cannot understand that they all agree.
 - it seems in a way to be as, well, I have been mentioned that way on several occasions myself: "if you agree with them, then you're an idiot!"
-

Board chair:

- a personality trait that the decision probably simply is becoming better. If we have agreed, and you have a genuine believe that going on discussing things makes us ending on something which, that if everyone agrees, then it is probably more correct, then it might be a better decision than what was first laid there. And then it is wrong, well, from time to time, then it is simply about that we disagree, and then the plural has to win. And there I am sure I have.. I have a few examples that I have let things go a bit too long then. In my hope of making an agreement, I have been a bit too optimistic and then we have thrown away time. But, so what?
 - Items where we know we have, which are difficult, there we have gone through several times. Discussed once, then had another discussion, yes, searched for solutions?
 - And in a way found the way around it. Either round it or through it depending.
 - But this is about, when there is an agreement in the board, then there is often, yes, a foundation much further out, too. So if you are just cutting the edge, when there is a forest of people being annoyed, then it is often difficult to have it followed up, too.
-

CEO:

- When the board evaluates itself, their largest grief is the absence of a room where they can learn to know each other and be allowed to speak openly – without having to think about the fact that someone is sitting listening, to be allowed to speak and ask stupid questions.
- It is something about phases. Because a lot of the board members express that they would like to go back to the time when we constructed the reorganisation programme, because then they were very active. Then there was a creative process, and then there was a lot disagreement, too, but then we made it the way that we had many seminars as mentioned, and then we worked through it, didn't we? And when we ended up with the decision, I believe we had used 30 seconds, but this was because everything had been discussed, right? In a way they had actually been allowed to contribute in all the processes. And it is obvious, when a programme is made and they have decided what to do, then the board moves to a totally different role, in a way they become more controllers.
- Especially last year when they were almost a bit depressed: What have we got to do now? How can we contribute?
- Then they did not know anymore who they were, and why they were there, and then we in a way had to, or the chair had to, put forward the full board instruction and then in a way discuss which roles have we actually got here...
- ..former they had a strong engagement of leadership, and then they made up with themselves, and if we are claiming actual leadership development, then we have to be sitting here with competence on it. You cannot ask a question and have an answer you don't understand, right?

Appendix V: Questionnaire – the Value Creating Board Survey

(Translated into English)

Number.

The Value Creating Board

This questionnaire is a part of the research on boards at the Norwegian School of Management, BI. The research is conducted in cooperation with The Confederation of Norwegian Enterprise, Oslo Stock Exchange, “The Academy of Boards” and other actors in Norwegian businesses. The project is conducted by a group of researchers chaired by Professor Morten Huse. This survey will further be the basis for two theses on boards. A goal is to increase the knowledge of boards’ contributions to value creation. The questionnaire will be sent to the CEO in a sample of Norwegian companies.

Recent events have shown that there is a major need for knowledge of the reality of board activities and of the way boards might contribute to value creation. To improve the knowledge of Norwegian boards, it is important that as many persons as possible respond to the survey, and that you all return the forms with complete answers. Therefore, we ask you within a week to send the completed form to the Norwegian School of Management, BI, Institute of Innovation and Economic Development, att. Cathrine Hansen, Box 580, 1302 Sandvika. The forms might also be sent by fax on fax number 67 55 76 77. The completed forms will be treated confidentially.

Most of the questions are formulated as statements, and you will be asked to consider these on a scale from 1-5, where 1 is “disagree” and 5 “agree”. We want you to circle the actual response alternative. This method is chosen for the ease of capturing nuances. However, it is better to estimate an answer compared with skipping the question. In some items you will be asked to choose one response alternative within a group (an example is question A12). In addition, we ask you to write IA (not actual) in the margin aside questions which do not fit in with your company (might be questions related to employee elected board members and questions of innovation).

If you have any questions or comments to the questionnaire, please contact Cathrine Hansen on phone number 67 55 72 43 or 92 80 84 88, e-mail cathrine.hansen@bi.no.

Sandvika, 15th October

Morten Huse (sign)

Professor

A Generally, about the company and the business

A1 Primarily, the CEO is expected to be the respondent. Please inform if you have another position in the company (specify)

A2 I (the CEO) am:

a. Board chair Yes/No

b. Board member Yes/No

A3 Has the chair previously been the CEO in the company? Yes/No

A4 Chair tenure in position (years)

A5 CEO - tenure in position (years)

A6 CEO - tenure in firm (years)

A7 CEO - number of other board positions

A8 Age chair (years)

A9 Age CEO (years)

A10 Gender chair (Male/female)

A11 Gender CEO (Male/female)

A12 What is the industry of the company? (select one)

1. Finance and properties

2. Services

3. Production

4. Other industries (specify)

A13 Do you consider the company to be a high-tech firm? Yes/No

A14 Has the company agreements with one or several trade unions? Yes/No

A15 Has the company got a corporate assembly Yes/No

A16 Has the company passed a generation change in the leadership? Yes/No

A17 Is the founder still active in the company? Yes/No

A18 Please inform to which degree you find the company to be in a period characterised by

Agree /Disagree

- | | |
|---|-----------|
| a. Creative innovation | 1 2 3 4 5 |
| b. Creation of market niches | 1 2 3 4 5 |
| c. Creativity at all levels..... | 1 2 3 4 5 |
| d. High consistency and coherence of the commitments..... | 1 2 3 4 5 |
| e. High involvement among leaders and employees | 1 2 3 4 5 |
| f. Stability | 1 2 3 4 5 |
| g. Established rules and procedures..... | 1 2 3 4 5 |
| h. Domain expansions | 1 2 3 4 5 |
| i. Decentralisation..... | 1 2 3 4 5 |

A19 In which year was your company (independent of corporate structure) founded?

.....

A20 Please report the number of employees on the 31st December 2002:

..... FTEs

A21 How much was the sales of the company in 2002 (in thousand NOK)?

.....NOK

B Ownership

B1 Please estimate the percentage of ownership by the following groups in the company in 2002

- | | |
|---|---------|
| a. CEO, TMT and respective families | % |
| b. Board chair | % |
| c. Board members | % |
| d. Domestic pension funds, life insurance companies, foundations, etc | % |
| e. Domestic banks and non-life insurance companies | % |
| f. Domestic hedge funds, brokerage houses, etc | % |
| g. Venture capitalists/business angles etc | % |
| h. Foreign institutional investors | % |
| i. Other domestic corporate ownership | % |
| j. Other domestic private individual ownership | % |
| k. Other foreign corporate owners (inclusive parent owners) | % |
| l. Other foreign private individuals | % |
| m. The public, state, municipalities | % |
| n. Others persons | % |

B2 Is your company a part of a group? Yes/No

B3 If yes, is your company the parent company? Yes/No

B4 Do you consider the company to be a family business? Yes/No

B5 Do one or more families control the voting in the board Yes/No

B6 Have one or more families got a majority ownership? Yes/No

B7 Are the owning family/families represented in the board? Yes/No

B8 Are the owning family/families represented in the leadership? Yes/No

B9 Are more than one generation of the company active in the company? Yes/No

C. The board members

C1 On the 31st December 2002, what was the number of

- | | |
|--|---------------------|
| a. full voting board members in the company? | board members |
| b. female board members? | board members |
| c. employee elected board members? | board members |
| d. female employee elected board members? | board members |

C2 Among the employee elected board members, what is the number of members who belongs to one or a group of unions? board members

C3 Board members have diversities in background. What is the number of shareholder elected board members who have got the following background:

(Every board member is just to be calculated in one category. The categories are mutual exclusive and are in the order of priority)

- | | |
|--|---------------------|
| a. CEO or a member of the TMT in the company | board members |
| b. CEO or a member of the TMT in another company | board members |
| c. Business lawyer | board members |
| d. Professional board member | board members |
| e. Professor/researcher | board members |
| f. Other (specify)..... | board members |

Please indicate to which degree you agree in the following statements: ***Agree/disagree***

C4 Our board has knowledge of

- | | |
|---|-----------|
| a. Main activities..... | 1 2 3 4 5 |
| b. Critical technology and critical competency..... | 1 2 3 4 5 |
| c. Weak points in the company..... | 1 2 3 4 5 |
| d. Development of critical technology | 1 2 3 4 5 |
| e. HMS (Health, Environment and Safety)..... | 1 2 3 4 5 |
| f. Customers' needs..... | 1 2 3 4 5 |

C5 The board members have not

Agree/Disagree

- | | |
|--|-----------|
| a. Family ties to CEO..... | 1 2 3 4 5 |
| b. Friendship ties to CEO | 1 2 3 4 5 |
| c. Business ties to the company..... | 1 2 3 4 5 |
| d. Ties to persons with major ownership interests..... | 1 2 3 4 5 |

C6 About board members who are not employee elected

- | | |
|---|-----------|
| a. External board members receive remuneration in addition to board compensation | 1 2 3 4 5 |
| b. External board members have relations to the other board members (e.g. in interlocks)..... | 1 2 3 4 5 |

C7 Our board members represent broad diversity in

- | | |
|---------------------------------|-----------|
| a. Functional background | 1 2 3 4 5 |
| b. Industrial background | 1 2 3 4 5 |
| c. Educational background | 1 2 3 4 5 |
| d. Age | 1 2 3 4 5 |
| e. Personality..... | 1 2 3 4 5 |

C8 Board members are positively motivated through

- | | |
|---|-----------|
| a. Personal ownership..... | 1 2 3 4 5 |
| b. Legal responsibility/liability..... | 1 2 3 4 5 |
| c. Personal professional standards..... | 1 2 3 4 5 |

D Board activities

Please indicate below to which degree you agree:

Agree/Disagree

D1 In decision making

- | | |
|---|-----------|
| a. External actors try to influence the decision-making of the board. | 1 2 3 4 5 |
| b. Internal actors try to influence the decision-making of the board | 1 2 3 4 5 |
| c. Chair contacts board members before meetings to get support for own views | 1 2 3 4 5 |
| d. Some board members meet before board meetings to discuss items on the agenda | 1 2 3 4 5 |

<i>D2 Role integration between CEO and chair: no clear separation of roles</i>	1 2 3 4 5
---	-----------

<i>D3 TMT believes in informing the board openly of all aspects of the company (operation and environment)</i>	1 2 3 4 5
---	-----------

D4 The chair and the CEO

- | | |
|---|-----------|
| a. Have common values and principles (norms) of the way of working in the board..... | 1 2 3 4 5 |
| b. Have the same values and principles (norms) of ethics, justice, CSR, etc | 1 2 3 4 5 |
| c. Have mutual expectations about each other's future actions. | 1 2 3 4 5 |
| d. Want to preserve good long term mutual personal relations | 1 2 3 4 5 |
| e. Want to preserve good long term mutual professional relations | 1 2 3 4 5 |
| f. CEO and chair emphasize mutual trust and positive attitudes when solving conflicts | 1 2 3 4 5 |

D5 The board is willing to

- | | |
|--|-----------|
| a. accept the CEO's evaluations of strategy formation..... | 1 2 3 4 5 |
| b. base evaluations on the CEO's knowledge and insight..... | 1 2 3 4 5 |
| c. believe that the CEO when needed will consult the board.. | 1 2 3 4 5 |
| d. mandate the the CEO to be the spokesperson for the firm and the board | 1 2 3 4 5 |
| e. accept strategic decisions made by the CEO | 1 2 3 4 5 |
| f. mandate the CEO to make decisions in important situations | 1 2 3 4 5 |

g. mandate the CEO to make strategic decisions without consulting the board	1	2	3	4	5
D6 I (CEO) feel that my work is appreciated by (the other) board members	1	2	3	4	5
D7 I (CEO) always look forward to the board meetings	1	2	3	4	5
D8 I (CEO) enjoy being together with the board members in social situations.	1	2	3	4	5
D9 It is a sign of high status to be board member in this firm	1	2	3	4	5
D10 The employee elected board members					
a. have power through local trade unions.....	1	2	3	4	5
b. know how employees will react to board decisions.....	1	2	3	4	5
c. are used to influence politicians and regulatory authorities .	1	2	3	4	5
d. have considerable power through their voting.....	1	2	3	4	5
D11 The board chair is skilled in					
a. motivating and using the competencies of each board member	1	2	3	4	5
b. formulating decisions and summarizing discussions.....	1	2	3	4	5
c. Conducting the meeting without promoting private motives	1	2	3	4	5
d. getting support for own proposals.....	1	2	3	4	5
D12 Length of board meetings (hours in 2002)? hours				
D13 Number of board meetings (2002)?				
D14 Number of decision points outside the board meeting without physical presence times				
D15 At the moment companies are asked to employ corporate governance codes. To which degree do you agree that the following measures are well established in your board?	Agree/Disagree				
a. Existence of a nomination committee	1	2	3	4	5
b. Existence of an audit committee.....	1	2	3	4	5
c. Existence of remuneration or other specific board committees	1	2	3	4	5
d. Existence of CEO work instructions.....	1	2	3	4	5
e. Existence of a board working description	1	2	3	4	5
f. Existence of regular board evaluations.....	1	2	3	4	5

g. Existence of regular board development activities.....	1	2	3	4	5
h. Existence of some meetings without the presence of CEO or internal board members.....	1	2	3	4	5
i. Majority of board members are independent of internal stakeholders	1	2	3	4	5
j. Majority of board members are independent of external stakeholders	1	2	3	4	5
k. There are clear rules for remuneration of board members...	1	2	3	4	5
l. The annual report presents extensive board information (as board activities and independence of board members).....	1	2	3	4	5
m. The company has a thorough CSR policy	1	2	3	4	5
n. Existence of rules for ratification and implementation of board decisions.....	1	2	3	4	5
o. Rules for how board members can get information from employees and TMT without going through the CEO	1	2	3	4	5
p. A thorough introduction for new board members.....	1	2	3	4	5
<i>D16 Board instructions are carefully followed</i>	1	2	3	4	5
<i>D17 Division of labour between board members is clear</i>	1	2	3	4	5
<i>D18 All board members are active during the meetings</i>	1	2	3	4	5
<i>D19 Our board members</i>					
a .fully use knowledge and skills in the board activities ...	1	2	3	4	5
b. give sufficient priority to the board tasks.....	1	2	3	4	5
c. are available if needed	1	2	3	4	5
<i>D20 Fast info flow between board members (by formal and informal channels)</i>	1	2	3	4	5
<i>D21 Board members explore information before meetings</i>	1	2	3	4	5
<i>D20 Our board is familiar with</i>					
a. the employees' views on HMS (Health, Environment and Safety)	1	2	3	4	5
b. employees' views on collaboration between management and the union(s)	1	2	3	4	5

<i>D23 Our board only receives HMS information from employee directors in the board</i>	1 2 3 4 5
<i>D24 Our board only receives union/management collaboration information from the employee directors</i>	1 2 3 4 5
<i>D25 Our board is usually actively seeking own information in addition to management reports</i>	1 2 3 4 5
<i>D26 Our board often asks critical questions to proposals initiated by management.....</i>	1 2 3 4 5
<i>D27 Our board often asks critical questions to info from management.</i>	1 2 3 4 5
<i>D28 Our board members present several creative and innovative proposals</i>	1 2 3 4 5
<i>D29 Our board members present creative and innovative solutions</i>	1 2 3 4 5
<i>D30 Our board is slow in decision-making.....</i>	1 2 3 4 5
<i>D31 Our board is impulsive in decision-making.....</i>	1 2 3 4 5
<i>D32 In our board disagreements/conflicts are present</i>	<i>Disagree/Agree</i>
a. on decisions.....	1 2 3 4 5
b. among groups of board members.....	1 2 3 4 5
c. between various owners/stakeholders.....	1 2 3 4 5
d. in discussions of the best solutions for the company	1 2 3 4 5
e. on how to achieve what is best for the company.....	1 2 3 4 5
f. on working style and board decision making processes	1 2 3 4 5
<i>D33 Disagreements are encouraged during board meetings</i>	1 2 3 4 5
<i>D34 Disagreements between the board and the management are not solved during the board meetings.....</i>	1 2 3 4 5
<i>D35 Disagreements among board members are not solved during the board meetings.....</i>	1 2 3 4 5
<i>D36 Our board members are willing to</i>	
a. discuss opposing professional viewpoints	1 2 3 4 5
b. accept the risk to be wrong.....	1 2 3 4 5

- c. advise the CEO related to their personal knowledge and views 1 2 3 4 5
- d. provide the CEO with various special and creative advice 1 2 3 4 5
- e. include private or individual preferences in evaluations 1 2 3 4 5
- D37 Board members are familiar with each other's' competency*** 1 2 3 4 5
- D38 When items are discussed,***
- a .board members with most experience and knowledge are the most influential ones 1 2 3 4 5
- b. board members representing the largest owners are the most influential ones..... 1 2 3 4 5
- D39 Good match between the board's work division and the knowledge and skills of the board members.....*** 1 2 3 4 5

E. Board tasks and contributions

Please indicate to which degree you agree in the following assertions on the board's contributions

Disagree/Agree

E1 Building networks with important stakeholders 1 2 3 4 5

E2 Lobbying and legitimation 1 2 3 4 5

E3 Our board advices

a. in general management questions 1 2 3 4 5

b. in legal questions 1 2 3 4 5

c. in financial questions 1 2 3 4 5

d. in technical questions 1 2 3 4 5

e. in market related questions 1 2 3 4 5

E4 Our board is involved in monitoring of

a. cost budgets 1 2 3 4 5

b. sales budgets 1 2 3 4 5

c. firm liquidity 1 2 3 4 5

d. investments 1 2 3 4 5

e. CEO performance 1 2 3 4 5

f. product quality 1 2 3 4 5

g. human resources 1 2 3 4 5

h. HMS (Health, Environment, Safety) 1 2 3 4 5

i. natural environment and pollution issues..... 1 2 3 4 5

j. financial outcomes to owners 1 2 3 4 5

k. CSR issues 1 2 3 4 5

E5 The management actively

a. formulates strategy proposals 1 2 3 4 5

b. ratifies long term strategic decisions 1 2 3 4 5

c. implements strategy decisions 1 2 3 4 5

d. controls and evaluates strategic decisions	1 2 3 4 5
---	-----------

E6 Our board actively

a. formulates strategy proposals	1 2 3 4 5
--	-----------

b. ratifies long term strategic decisions	1 2 3 4 5
---	-----------

c. implements strategy decisions	1 2 3 4 5
--	-----------

d. controls and evaluates strategic decisions	1 2 3 4 5
---	-----------

E7 Our board

a. ensures proper organisation of firm activities.....	1 2 3 4 5
--	-----------

b. establishes plans and budgets for firm activities	1 2 3 4 5
--	-----------

c. establishes directions for firm activities	1 2 3 4 5
---	-----------

d. ensures that the members are oriented about the financial position of the firm	1 2 3 4 5
--	-----------

e. ensures that the firm is object to proper control	1 2 3 4 5
--	-----------

f. monitors the management.....	1 2 3 4 5
---------------------------------	-----------

<i>E8 Board decides about CEO compensation ...</i>	1 2 3 4 5
---	-----------

<i>E9 Board treats shareholders equally</i>	1 2 3 4 5
--	-----------

F Value creation and innovation in the company

Theoretically and practically, innovation is perceived to be important in relationship to value creation. However, innovation contains several aspects, and some of these are not of importance to all companies. Please comment here if this part of the questionnaire does not fit in for your company:

.....

F1 Please indicate to which degree the company emphasises the following fields: Low/high

- | | |
|--|-----------|
| a. Being the first company in the industry to introduce new products to the market | 1 2 3 4 5 |
| b. Creating radically new products for sale in new markets | 1 2 3 4 5 |
| c. Creating radically new products for sale in the company's existing markets | 1 2 3 4 5 |
| d. Commercialising new products | 1 2 3 4 5 |
| e. Investing heavily in cutting edge product-oriented R & D..... | 1 2 3 4 5 |
| f. Investing heavily in cutting edge process-oriented R & D..... | 1 2 3 4 5 |
| g. Being the first company in the industry to develop and introduce radically new technologies | 1 2 3 4 5 |
| h. Pioneering the creation of new process technologies | 1 2 3 4 5 |
| i. Copying other companies' process technologies | 1 2 3 4 5 |
| j. Being the first in the industry to develop innovative management systems | 1 2 3 4 5 |
| k. Being the first in the industry to introduce new business concepts and practices | 1 2 3 4 5 |
| l. Changing the organisation structure in significant ways to promote innovation | 1 2 3 4 5 |
| m. Introducing innovative human resource programs to spur creativity and innovation | 1 2 3 4 5 |
| n. Entering new domestic markets | 1 2 3 4 5 |
| o. Promoting new domestic business creation | 1 2 3 4 5 |
| p. Diversifying into new industries in Norway | 1 2 3 4 5 |
| q. Supporting domestic new venture activities | 1 2 3 4 5 |
| r. Financing domestic start-up activities | 1 2 3 4 5 |
| s. Entering new foreign markets | 1 2 3 4 5 |
| t. Expanding international operations | 1 2 3 4 5 |

u. Supporting star-up business activities dedicated to international operations	1 2 3 4 5
v. Financing start-up business activities dedicated to international operations	1 2 3 4 5
w. utilising the potential in gender differences	1 2 3 4 5
<i>F2 To which degree does your business show potential in</i>	<i>Low/High</i>
a. Product innovation.....	1 2 3 4 5
b. Technological innovation.....	1 2 3 4 5
c. Patenting new products.....	1 2 3 4 5
d. Patenting new process technologies.....	1 2 3 4 5
e. Investment in research and development.....	1 2 3 4 5
<i>To which degree do you agree in the following assortments?</i>	
<i>F3 During the last three years</i>	<i>Disagree/Agree</i>
a. The company has experience financial crisis (recent 3 years)	1 2 3 4 5
b. The company has experienced external events resulting in restructuring and actions of crisis (recent 3 years)	1 2 3 4 5
c. The company has experienced crisis based on internal (non-financial) problems (recent 3 years)	1 2 3 4 5
d. The company has experienced external pressure to replace board or management (recent 3 years)	1 2 3 4 5
<i>F4 The company emphasizes that of having a society serving role</i>	1 2 3 4 5
<i>F5 The company has today good reputation among politicians and in the local society</i>	1 2 3 4 5
<i>F6 The company is governed through a thorough value fundament</i>	1 2 3 4 5
<i>F7 The company emphasizes HMS (Health, Environment and Safety)</i>	1 2 3 4 5
<i>F8 I consider the company to be</i>	
a. a company in a fast expanding industry	1 2 3 4 5
b. fast growing (25% annual sales growth)	1 2 3 4 5
<i>F9 The company has an advantageous geographical localisation</i>	1 2 3 4 5

We will thank you for your contribution.

I want to receive an electronic summary report of the survey:

Yes/No

Please specify your e-mail address:

We would like to collect and compare the answers from both CEO and board chairs in the companies. We will thus if possible, ask for an e-mail address of the board chair in the company to be able to ask him/her to complete the same questionnaire. (We will not inform the board chair of your answers).

.....

Appendix VI: Questionnaire – the Value Creating Board Survey

(The original one – in Norwegian)

The questionnaire is presented on page 339:

Nr.

DET VERDISKAPENDE STYRET

Spørreskjemaet inngår som en del av Handelshøyskolen BIs forskning om styre. Denne forskningen skjer i samarbeid med NHO, SND, Oslo Børs, StyreAkademiet og andre aktører i næringslivet. Arbeidet gjennomføres av en gruppe forskere ledet av professor Morten Huse. Denne undersøkelsen vil også være grunnlag for to doktorgradsavhandlinger om styre. Et mål er å øke kunnskapen om styrenes bidrag til verdiskaping. Spørreskjemaet sendes til daglig leder/administrerende direktør i et utvalg av norske selskaper.

Hendelser den siste tiden har vist at det eksisterer et stort behov for kunnskap om faktisk styrearbeid og hvordan styre kan bidra til verdiskaping. For bedre å sikre kunnskaper om norske styre, er det viktig at flest mulig svarer på undersøkelsen, og at dere sender skjemaene tilbake komplett besvart. Vi ber deg derfor innen en uke sende det utfylte spørreskjemaet til Handelshøyskolen BI, Institutt for innovasjon og økonomisk organisering v/Cathrine Hansen, Boks 580, 1302 Sandvika. Det er også mulig å sende svarene inn pr. faks på nummer 6755 7677. Svarene vil bli behandlet konfidensielt.

De fleste spørsmålene er formulert som påstander, og du blir bedt om å ta stilling til disse på en skala fra 1-5 hvor 1 er "uenig" og 5 "enig". Vi ber deg sette ring rundt det aktuelle svaralternativet. Denne formen er valgt for lettere å fange opp nyanser. Det er imidlertid bedre å svare med et anslag enn ikke å svare. I enkelte tilfeller bes du velge ett svaralternativ blant flere (se eksempel i spørsmål A12). I tillegg ber vi deg om å skrive IA (ikke aktuell) i margin ved siden av spørsmål som ikke passer for ditt selskap (f.eks. enkelte spørsmål knyttet til ansattevalgte styremedlemmer og spørsmål om innovasjon).

Hvis du har spørsmål eller kommentarer til spørreskjemaet, kan du henvende deg til stipendiat Cathrine Hansen på telefon 6755 7243 eller 928 08 488, e-mail cathrine.hansen@bi.no.

Sandvika, 15. oktober

Morten Huse (sign)
Professor

A Generelt om selskapet og bransjen

A1 Spørreskjemaet skal primært besvares av daglig leder. Vennligst tilkjennegi om du har annen stilling i selskapet (spesifiser)

A2 Jeg (daglig leder i selskapet) er:

- a. også styreleder Ja Nei
b. medlem av styret med full stemmerett Ja Nei

A3 Har styreleder tidligere vært daglig leder i selskapet? Ja Nei

A4 Hvor lenge har den nåværende styreleder innehatt denne posisjonen? ... ca.....år

A5 Hvor lenge har du (daglig leder) sittet i din nåværende jobb som daglig leder? ca.....år

A6 Hvor lenge har du arbeidet i selskapet? ca år

A7 Hvor mange styreverv har du (daglig leder) i andre selskap?styreverv

A8 Hva er alderen til styreleder? ca.....år

A9 Hva er din (daglig leders) alder? ca.....år

A10 Hvilket kjønn har styreleder? Mann Kvinne

A11 Hvilket kjønn har du (daglig leder)? Mann Kvinne

A12 Hva er selskapets hovedbransje? (velg ett alternativ)

1. finans og eiendom
2. service og tjenesteyting
3. industri og produksjon
4. annet (spesifiser)

A13 Anser du selskapet for å være en high-tech bedrift?..... Ja Nei

A14 Har bedriften tariffavtaler med en eller flere fagforeninger? Ja Nei

A15 Har selskapet en bedriftsforsamling? Ja Nei

A16 Er det vært et generasjonsskifte i selskapets ledelse ? Ja Nei

A17 Er grunnleggeren fremdeles aktiv i selskapet? Ja Nei

A18 Vennligst angi i hvilken grad du mener ditt selskap er i en fase preget av	Uenig					Enig				
a. tidlig stadium av innovasjon	1	2	3	4	5					
b. dannelsen av markedsnisjer	1	2	3	4	5					
c. kreativitet	1	2	3	4	5					
d. høy konsekvens og sammenheng i selskapets satsning	1	2	3	4	5					
e. høy forpliktelse blant ansatte og ledelsen	1	2	3	4	5					
f. stabilitet	1	2	3	4	5					
g. fastlagte regler og prosedyrer	1	2	3	4	5					
h. utvidelse av markedsdomener	1	2	3	4	5					
i. desentralisering	1	2	3	4	5					

A19 I hvilket år ble ditt selskap (uavhengig av selskapsform) først formelt grunnlagt? ca.....

A20 Hvor mange årsverk hadde selskapet pr 31. desember 2002? ca.....årsverk

A21 Hva var omsetningen for selskapet i 2002 (i tusen nkr.)? ca.....TNOK

B Eierskap

B1 Vennligst anslå det prosentvise eierskapet i selskapet for de følgende gruppene i 2002 (totalt 100%):

a. Daglig leder eller ledergruppen og deres nærmeste familier	ca.....%
b. Styreleder	ca.....%
c. Andre styremedlemmer	ca.....%
d. Norske pensjonsfond, livsforsikringsselskaper, stiftelser, etc	ca.....%
e. Norske banker, skadeforsikringsselskaper, etc.	ca.....%
f. Norske aksjefond, meglerhus, etc.	ca.....%
g. Norske risikokapitalister/business angles, etc	ca.....%
h. Utenlandske institusjonelle investorer (finansielt eierskap)	ca.....%
i. Andre norske bedrifter/selskap (f.eks. industrielt eierskap, morselskap)....	ca.....%
j. Andre norske privatpersoner	ca.....%
k. Andre utenlandske bedrifter/selskap (f.eks. industrielt eierskap, morselskap)	ca.....%
l. Andre utenlandske privatpersoner	ca.....%
m. Offentlige myndigheter, stat, kommune, etc.	ca.....%
n. Andre	ca.....%

B2 Er ditt selskap del av et konsern? Ja Nei

B3 Hvis ja, er ditt selskap morselskapet? Ja Nei

B4 Mener du at selskapet er et familieselskap? Ja Nei

B5 Har en eller flere familier kontroll med stemmegivningen i styret? Ja Nei

B6 Har en eller flere familier majoritetseierskap (50% eller mer) i selskapet? ... Ja Nei

B7 Er eierfamilien(e) representert i styret? Ja Nei

B8 Er eierfamilien(e) representert i ledelsen? Ja Nei

B9 Er flere generasjoner i samme familie aktive i selskapet? Ja Nei

C Styrets medlemmer

C1 Hvor mange styremedlemmer med full stemmerett

- | | | |
|----|--|--------------------|
| a. | hadde selskapet den 31. desember 2002? |styremedlemmer |
| b. | er kvinner (totalt)? |styremedlemmer |
| c. | er valgt av de ansatte? |styremedlemmer |
| d. | er kvinner valgt av de ansatte? |styremedlemmer |

C2 Hvor mange av de ordinære ansattevalgte styremedlemmene representerer

en eller en gruppe av fagforeninger?antall

C3 Styremedlemmer har ulike bakgrunn. Hvor mange av de aksjonærvalgte styremedlemmene har følgende bakgrunn? (Hvert styremedlem skal bare regnes i én kategori. Kategoriene er gjensidig utelukkende, og står i prioritert rekkefølge. F.eks. skal en forretningsadvokat (gruppe c) som også tilhører gruppe d eller e kun oppføres i gruppe c.)

- | | | |
|----|---|------------|
| a. | Daglig leder eller annen leder i selskapet |antall |
| b. | Daglig leder eller annen leder i et annet selskap |antall |
| c. | Forretningsadvokat |antall |
| d. | Annen person med styremedlemskap som yrke/arbeid |antall |
| e. | Professor, forsker, etc. |antall |
| f. | Andre (spesifiser) |antall |

Vennligst indiker i hvilken grad du er enig i de følgende påstandene:

Uenig Enig

C4 Vårt styre har stor kunnskap til og forståelse av

- | | | | | | | |
|----|--|---|---|---|---|---|
| a. | hva som foregår av hovedaktiviteter i selskapet | 1 | 2 | 3 | 4 | 5 |
| b. | hva som er den kritiske teknologi og nøkkelkompetansen for selskapet | 1 | 2 | 3 | 4 | 5 |
| c. | de svake punktene i selskapet | 1 | 2 | 3 | 4 | 5 |
| d. | utviklingen i selskapets teknologiske miljø | 1 | 2 | 3 | 4 | 5 |
| e. | saker i selskapet som har å gjøre med helse, miljø og sikkerhet | 1 | 2 | 3 | 4 | 5 |
| f. | våre kunders behov | 1 | 2 | 3 | 4 | 5 |

C5 Styremedlemmene har ikke

- | | | | | | | |
|----|--|---|---|---|---|---|
| a. | familiebånd til daglig leder | 1 | 2 | 3 | 4 | 5 |
| b. | vennskapsbånd til daglig leder | 1 | 2 | 3 | 4 | 5 |
| c. | forretningsbånd til selskapet | 1 | 2 | 3 | 4 | 5 |
| d. | bånd til andre personer eller selskaper med store eierinteresser i selskapet ... | 1 | 2 | 3 | 4 | 5 |

C6 Styremedlemmer som ikke er ansatt i selskapet

- | | | | | | | |
|----|--|---|---|---|---|---|
| a. | mottar annen godtgjørelse enn styrehonorar (f.eks. konsulentgodtgjørelse) fra selskapet | 1 | 2 | 3 | 4 | 5 |
| b. | har relasjoner til andre av styrets medlemmer, f.eks. gjennom felles deltakelse i andre styrer | 1 | 2 | 3 | 4 | 5 |

C7 Våre styremedlemmer representerer stor bredde mht

- | | | | | | | |
|----|--|---|---|---|---|---|
| a. | funksjonell bakgrunn (f.eks. salg, finans, regnskap) | 1 | 2 | 3 | 4 | 5 |
| b. | industriell bakgrunn (f.eks. ulike bransjer)..... | 1 | 2 | 3 | 4 | 5 |
| c. | utdannings bakgrunn (type, dvs. ikke nivå)..... | 1 | 2 | 3 | 4 | 5 |
| d. | alder | 1 | 2 | 3 | 4 | 5 |
| e. | personlighet (personlighetstrekk, type, lederstil, måten å fatte beslutninger) . | 1 | 2 | 3 | 4 | 5 |

C8 Styremedlemmene er positivt motivert til å gjøre en god jobb på grunn av

- | | | | | | | |
|----|---|---|---|---|---|---|
| a. | egne eierinteresser (aksjer, aksjeopsjoner) | 1 | 2 | 3 | 4 | 5 |
| b. | formelt juridisk ansvar (f.eks. strafferettslig ansvar) | 1 | 2 | 3 | 4 | 5 |
| c. | egne faglige eller profesjonelle standarder | 1 | 2 | 3 | 4 | 5 |

D Styrets arbeid

Vennligst indiker i hvilken grad du er enig i de følgende påstandene:

Uenig Enig

D1 Når styret skal fatte viktige beslutninger

- | | | | | | | |
|----|---|---|---|---|---|---|
| a. | forsøker eksterne interessenter eller aktører (f.eks. grupper av eiere, investorer, forretningsforbindelser) å påvirke beslutningstakingen i styret | 1 | 2 | 3 | 4 | 5 |
| b. | forsøker interne interessenter eller aktører (f.eks. daglig leder eller personer i toppledelsen) å påvirke beslutningstakingen i styret | 1 | 2 | 3 | 4 | 5 |
| c. | kontakter styreleder andre styremedlemmer før møtene for å få støtte til sine synspunkter | 1 | 2 | 3 | 4 | 5 |
| d. | diskuterer noen av styremedlemmene (formelt eller uformelt) de aktuelle sakene før styremøtene | 1 | 2 | 3 | 4 | 5 |

D2 Det eksisterer ingen klar arbeidsdeling mellom styreleder og daglig leder 1 2 3 4 5

D3 Toppledelsen har tro på å holde styret informert om alle aspekter rundt drift av selskapet og om dets omgivelser 1 2 3 4 5

D4 Styreleder og daglig leder

- | | | | | | | |
|----|--|---|---|---|---|---|
| a. | har felles verdier, uskrevne regler og prinsipper for styrets arbeidsformer | 1 | 2 | 3 | 4 | 5 |
| b. | har felles verdier, holdninger og normer mht. etikk, rettferd, selskapets samfunnsansvar, osv. | 1 | 2 | 3 | 4 | 5 |
| c. | har gjensidige forventninger til hverandres fremtidige handlinger | 1 | 2 | 3 | 4 | 5 |
| d. | legger meget stor vekt på innbyrdes <u>bevaring</u> av gode personlige relasjoner .. | 1 | 2 | 3 | 4 | 5 |
| e. | legger meget stor vekt på innbyrdes <u>bevaring</u> av gode faglige og profesjonelle relasjoner | 1 | 2 | 3 | 4 | 5 |
| f. | legger meget stor vekt på tillit og en positiv innstilling til hverandre når konflikter skal løses | 1 | 2 | 3 | 4 | 5 |

D5 Generelt er vårt styret villig til å

- | | | | | | | |
|----|--|---|---|---|---|---|
| a. | akseptere daglig leders vurdering av strategiutforming | 1 | 2 | 3 | 4 | 5 |
| b. | basere sine vurderinger på kunnskap og innsikt fra daglig leder | 1 | 2 | 3 | 4 | 5 |
| c. | tro at daglig leder ved behov vil konsultere styret | 1 | 2 | 3 | 4 | 5 |
| d. | gi daglig leder mandat til å være talsperson for styrets eller selskapets synspunkter | 1 | 2 | 3 | 4 | 5 |
| e. | akseptere strategiske avgjørelser fattet av daglig leder | 1 | 2 | 3 | 4 | 5 |
| f. | gi daglig leder mandat til å handle på vegne av selskapet i viktige situasjoner | 1 | 2 | 3 | 4 | 5 |
| g. | gi daglig leder mandat til å fatte strategiske beslutninger uten først å konsultere styret | 1 | 2 | 3 | 4 | 5 |

D6 Jeg (daglig leder) føler at mitt arbeid blir satt pris på av (de andre) styremedlemmene 1 2 3 4 5

D7 Jeg (daglig leder) ser alltid frem til styremøtene 1 2 3 4 5

D8 Jeg (daglig leder) liker å være sammen med styremedlemmene i sosial sammenheng 1 2 3 4 5

D9 Det er et tegn på høy status å få være medlem av styret i dette selskapet 1 2 3 4 5

D10 De ansattevalgte styremedlemmene

- | | | | | | | |
|----|--|---|---|---|---|---|
| a. | har makt i styret gjennom sin lokale fagforening eller sammenslutninger av fagforeninger | 1 | 2 | 3 | 4 | 5 |
| b. | kjenner til hvordan styrebeslutninger vil bli mottatt blant de ansatte | 1 | 2 | 3 | 4 | 5 |
| c. | er vant til å øve innflytelse på politikere og regulerende instanser | 1 | 2 | 3 | 4 | 5 |
| d. | har betydelig makt i selskapet gjennom sin stemmegivning i styret | 1 | 2 | 3 | 4 | 5 |

D11 Styreleder er spesielt dyktig til å

- | | | | | | | |
|----|---|---|---|---|---|---|
| a. | motivere og benytte kompetansen til <u>hvert enkelt</u> styremedlem | 1 | 2 | 3 | 4 | 5 |
| b. | formulere og oppsummere avgjørelser fra diskusjonene | 1 | 2 | 3 | 4 | 5 |
| c. | lede diskusjonen i styret uten å fremme sin egen agenda eller motiver | 1 | 2 | 3 | 4 | 5 |
| d. | få sine egne forslag vedtatt av styret | 1 | 2 | 3 | 4 | 5 |

D12 Hvor mange timer varte oftest et styremøte i 2002?timer

D13 Hvor mange styremøter med fysisk tilstedeværelse ble avholdt i 2002?møter

D14 Hvor mange ganger var det formell styrebehandling (f.eks. telefonmøter, e-mails, faks) i 2002 utenom styremøtene? ganger

D15 Det er for tiden et ønske om at selskaper skal følge koder for styring/corporate governance. I hvilken grad er du enig i at de følgende tiltakene finnes godt etablert i ditt styre? (Bruk mellomalternativer dersom tiltaket er delvis etablert.)

	Uenig		Enig
a. en nominasjonskomité (f.eks. valgkomité)	1	2 3 4	5
b. en "audit" komité (f.eks. revisjonskomité, kontrollkomité, etc)	1	2 3 4	5
c. en kompensasjonskomité eller andre oppgavespesifikke komiteer	1	2 3 4	5
d. en arbeidsbeskrivelse for daglig leder	1	2 3 4	5
e. en styreinstruks (inkludert regler for innkalling, utsendelse av agenda)	1	2 3 4	5
f. regelmessig styreevaluering	1	2 3 4	5
g. regelmessige styreutviklingstiltak (f.eks. opplæring og kurs)	1	2 3 4	5
h. at enkelte styremøter avholdes uten daglig leders eller interne styremedlemmers tilstedeværelse	1	2 3 4	5
i. at en majoritet av styrets medlemmer skal være uavhengige av <u>interne</u> interessenter (dvs. daglig leder og ansatte i selskapet)	1	2 3 4	5
j. at en majoritet av styrets medlemmer skal være uavhengige av <u>eksterne</u> interessenter (dvs. eiere, banker, forretningsforbindelser, osv.)	1	2 3 4	5
k. klare regler for godtgjørelse til styremedlemmer	1	2 3 4	5
l. omfattende informasjon til interessenter i årsrapportene om hvordan styret arbeider og om styremedlemmers uavhengighet	1	2 3 4	5
m. en gjennomarbeidet politikk for forholdet til ulike interessenter, inkludert regler for etisk regnskapsføring, selskapets samfunnsansvar, osv.	1	2 3 4	5
n. regler for å godkjenne og følge opp styrevedtak	1	2 3 4	5
o. regler om at styremedlemmer kan få informasjon fra ansatte og ledergruppen uten å gå via daglig leder	1	2 3 4	5
p. en grundig introduksjon for nye styremedlemmer	1	2 3 4	5
D16 Styreinstruksen følges nøye	1	2 3 4	5
D17 Det eksisterer en tydelig arbeidsdeling mellom styremedlemmene	1	2 3 4	5
D18 Alle styremedlemmene deltar aktivt under møtene	1	2 3 4	5
D19 Våre styremedlemmer			
a. bruker fullt ut sine kunnskaper og sine evner i sitt styreengasjement	1	2 3 4	5
b. prioriterer tilstrekkelig tid til sitt styreoppdrag i selskapet	1	2 3 4	5
c. er alltid tilgjengelige dersom styrearbeidet skulle kreve det	1	2 3 4	5
D20 Informasjon flyter raskt mellom styremedlemmer både via formelle og uformelle kanaler ...	1	2 3 4	5
D21 Våre styremedlemmer undersøker nøye relevant informasjon før møtene	1	2 3 4	5
D22 Vårt styre er kjent med de ansattes syn på			
a. helse, miljø og sikkerhet	1	2 3 4	5
b. samarbeidet mellom ledelsen og fagforeningen(e)	1	2 3 4	5
D23 Vårt styre får sin informasjon om helse, miljø og sikkerhet utelukkende fra de ansattevalgte i styret	1	2 3 4	5
D24 Vårt styre får sin informasjon om samarbeidet mellom ledelsen og fagforeningen(e) utelukkende fra de ansattevalgte i styret	1	2 3 4	5
D25 Vårt styre er som oftest aktivt med å finne egen informasjon i tillegg til rapportene fra ledelsen	1	2 3 4	5
D26 Vårt styre stiller ofte kritiske spørsmål i forbindelse med forslag som er initiert av ledelsen .	1	2 3 4	5
D27 Vårt styre stiller ofte kritiske spørsmål til informasjon som ledelsen presenterer	1	2 3 4	5
D28 Våre styremedlemmer presenterer mange kreative og innovative forslag	1	2 3 4	5
D29 Vårt styre finner mange kreative og innovative løsninger	1	2 3 4	5
D30 Vårt styre er langsom i sin beslutningstaking	1	2 3 4	5
D31 Vårt styre er impulsivt i sin beslutningstaking	1	2 3 4	5

D32 I vårt styre er det ofte konflikter eller uenighet	Uenig	Enig
a. om beslutninger	1 2 3 4 5	
b. blant grupper av styremedlemmer	1 2 3 4 5	
c. mellom ulike eiere eller andre interessenter	1 2 3 4 5	
d. i drøftelser med hensyn til hva som er best for selskapet	1 2 3 4 5	
e. i drøftelser med hensyn til hvordan man skal oppnå det beste for selskapet	1 2 3 4 5	
f. om styrets arbeidsformer og beslutningsprosesser	1 2 3 4 5	
D33 Uenighet blir oppmuntret under våre styremøter	1 2 3 4 5	
D34 Uenighet mellom styret og ledelsen blir <u>ikke</u> løst under våre styremøter	1 2 3 4 5	
D35 Uenighet blant styremedlemmene blir <u>ikke</u> løst under våre styremøter	1 2 3 4 5	
D36 Vårt styre er villig til å		
a. diskutere motstridende profesjonelle standpunkter	1 2 3 4 5	
b. akseptere risikoen for at de kan ta feil	1 2 3 4 5	
c. gi daglig leder råd som er relatert til styremedlemmenes personlige kunnskap, synspunkter og ideer	1 2 3 4 5	
d. forsyne daglig leder med spesielle, kreative og ulike råd	1 2 3 4 5	
e. inkludere personlige eller individuelle preferanser i sine vurderinger	1 2 3 4 5	
D37 Styremedlemmene kjenner godt til hverandres kompetanse	1 2 3 4 5	
D38 Når en sak diskuteres		
a. har styremedlemmene med mest erfaring og kunnskap om saken størst innflytelse	1 2 3 4 5	
b. har styremedlemmene som representerer eierne med de største aksjepostene størst innflytelse	1 2 3 4 5	
D39 Arbeidsdelingen i dette styret er en godt match mellom styremedlemmenes kunnskap/kompetanse og typen arbeidsoppgave	1 2 3 4 5	

E Styrets roller og bidrag

Vennligst indiker i hvilken grad du er enig i de følgende påstander om styrets bidrag: **Uenig** **Enig**

E1 Vårt styre bidrar til nettverksbygging, dvs. kontakter med viktige interessentgrupper (finansielle institusjoner, kunder, myndighetene, osv.) 1 2 3 4 5

E2 Vårt styre bidrar til lobbyvirksomhet og legitimering, dvs. påvirker viktige interessenter 1 2 3 4 5

E3 Vårt styre bidrar med råd

a. i generelle ledelsesspørsmål	1 2 3 4 5
b. i juridiske spørsmål	1 2 3 4 5
c. i finansielle spørsmål	1 2 3 4 5
d. i tekniske spørsmål	1 2 3 4 5
e. i markedsspørsmål	1 2 3 4 5

E4 Vårt styre er involvert i å følge opp

a. kostnadsbudsjetter	1 2 3 4 5
b. salgsbudsjetter	1 2 3 4 5
c. selskapets likviditet	1 2 3 4 5
d. investeringer	1 2 3 4 5
e. daglig leders innsats	1 2 3 4 5
f. produktkvalitet	1 2 3 4 5
g. personalressurser	1 2 3 4 5
h. helse, arbeidsmiljø og sikkerhet	1 2 3 4 5
i. saker rundt naturvern, miljø og forurensning	1 2 3 4 5
j. finansielt utbytte for eierne	1 2 3 4 5
k. aktivitet som relateres til selskapets samfunnsansvar	1 2 3 4 5

E5 Daglig leder og ledelsen

a. utarbeider aktivt strategiforslag	1 2 3 4 5
b. tar aktivt beslutninger om langsiktige strategier	1 2 3 4 5

		Uenig			Enig		
c.	gjennomfører strategibeslutninger	1	2	3	4	5	
d.	kontrollerer og evaluerer aktivt strategibeslutninger	1	2	3	4	5	

E6 Vårt styre

a.	utarbeider aktivt strategiforslag	1	2	3	4	5	
b.	tar aktivt beslutninger om langsiktige strategier	1	2	3	4	5	
c.	gjennomfører strategibeslutninger	1	2	3	4	5	
d.	kontrollerer og evaluerer aktivt strategibeslutninger	1	2	3	4	5	

E7 Vårt styre

a.	sørger for forsvarlig organisering av virksomheten	1	2	3	4	5	
b.	fastsetter planer og budsjetter for selskapets virksomhet	1	2	3	4	5	
c.	fastsetter retningslinjer for virksomheten	1	2	3	4	5	
d.	holder seg orientert om selskapets økonomiske stilling	1	2	3	4	5	
e.	påser at virksomheten er gjenstand for betryggende kontroll	1	2	3	4	5	
f.	fører tilsyn med den daglige ledelsen	1	2	3	4	5	

E8 Vårt styre avgjør godtgjørelse til daglig leder	1	2	3	4	5	
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E9 Vårt styre foretar seg aldri noe som er egnet til å gi visse aksjonærer fordel på andre aksjonærers bekostning	1	2	3	4	5	
---	---	---	---	---	---	--

F Verdiskaping og innovasjon i selskapet

Innovasjon er i teori og praksis oppfattet som sentralt i forbindelse med verdiskaping. Innovasjon har imidlertid mange sider, og noen av dem er ikke like relevante for alle bedrifter. Vennligst kommenter her dersom denne gruppen av spørsmål ikke passer for ditt selskap.

F1 Vennligst indiker i hvilken utstrekning selskapet legger vekt på de følgende områdene: (merk: skala lav-høy)

		Lav			Høy		
a.	Å være det første selskapet i bransjen som introduserer nye produkter i markedet	1	2	3	4	5	
b.	Å utvikle helt nye produkter for salg i nye markeder	1	2	3	4	5	
c.	Å introdusere helt nye produkter for salg i selskapets eksisterende markeder	1	2	3	4	5	
d.	Å kommersialisere nye produkter	1	2	3	4	5	
e.	Å investere tungt i dristig/nyskapende produktorientert forskning og utvikling ..	1	2	3	4	5	
f.	Å investere tungt i dristig/nyskapende prosesssteknologisk orientert forskning og utvikling	1	2	3	4	5	
g.	Å være det første selskap i bransjen til å utvikle og introdusere helt nye teknologier	1	2	3	4	5	
h.	Å være pionerer i å skape nye prosesssteknologier	1	2	3	4	5	
i.	Å kopiere andre selskapers prosesssteknologier	1	2	3	4	5	
j.	Å være først i bransjen til å utvikle innovative ledelsessystemer	1	2	3	4	5	
k.	Å være først i bransjen til å introdusere nye forretningskonsepter og -praksis	1	2	3	4	5	
l.	Å endre organisasjonsstrukturen i betydelig grad for å fremme innovasjon	1	2	3	4	5	
m.	Å introdusere innovative personalutviklingsprogrammer for å fremme kreativitet og innovasjon	1	2	3	4	5	
n.	Å gå inn på nye innenlandske markeder	1	2	3	4	5	
o.	Å fremme det å skape ny innenlandsk forretninger	1	2	3	4	5	
p.	Å øke virksomheten ved å tre inn i nye bransjer i Norge	1	2	3	4	5	
q.	Å støtte nye satsninger innenlandsk	1	2	3	4	5	
r.	Å finansiere oppstart av ny innenlandsk forretningsaktivitet	1	2	3	4	5	
s.	Å gå inn på nye utenlandske markeder	1	2	3	4	5	
t.	Å utvide den internasjonale virksomheten	1	2	3	4	5	
u.	Å støtte oppstart av nye forretningsaktiviteter tiltenkt internasjonale operasjoner .	1	2	3	4	5	

	Lav			Høy		
v. Å finansiere oppstart av nye forretningsaktiviteter dedikert til internasjonale operasjoner	1	2	3	4	5	
w. Å utnytte potensialet som ligger i forskjellene mellom kvinner og menn	1	2	3	4	5	

F2 I hvilken grad kjennetegnes din bransje nå (dvs. f.eks. siste tre år) av mulighet for:	Lav			Høy		
a. produkt innovasjon	1	2	3	4	5	
b. teknologisk innovasjon	1	2	3	4	5	
c. å patentere nye produkter	1	2	3	4	5	
d. å patentere nye prosess (produksjons) teknologier	1	2	3	4	5	
e. investeringer i forskning og utvikling	1	2	3	4	5	

I hvilken grad er du enig i følgende påstander:

F3 I løpet av de siste tre årene	Uenig			Enig		
a. har selskapet opplevd en finansiell krise, likviditetsproblemer, konkursbegjæring, hatt akkord eller omfattende refinansiering	1	2	3	4	5	
b. har selskapet opplevd plutselige eksterne begivenheter som har medført behov for vesentlige omstillinger eller krisetiltak	1	2	3	4	5	
c. har selskapet opplevd krise eller store problemer forårsaket av interne forhold (f.eks. lekkasjer, illojalitet fra medarbeidere, maktkamper, medarbeiderflukt, sabotasje, motarbeiding eller motstand mot ledelsen)	1	2	3	4	5	
d. har selskapets opplevd en eller flere begivenheter som har resultert i eksternt press (f.eks. fra media, aksjonærer eller andre interessentgrupper) for utskiftning av ledelse eller styre	1	2	3	4	5	

F4 Selskapet legger stor vekt på å ha en samfunnsnyttig rolle 1 2 3 4 5

F5 Selskapet har i dag et veldig godt renommé blant politikere og i lokalmiljøet 1 2 3 4 5

F6 Selskapet styres ut fra et gjennomtenkt verdigrunnlag 1 2 3 4 5

F7 Selskapet legger stor vekt på helse, miljø og sikkerhet..... 1 2 3 4 5

F8 Jeg anser at selskapet						
a. er i en bransje som ekspanderer raskt	1	2	3	4	5	
b. selv er i rask vekst (f.eks. rundt 25% vekst i salg pr år)	1	2	3	4	5	

F9 Geografisk har vårt selskap en fordelaktig lokalisering 1 2 3 4 5

Takk for hjelpen

Jeg er interessert i å motta en elektronisk sammendragsrapport for undersøkelsen Ja Nei

Hvilken e-mail adresse skal anvendes?

Vi ønsker å få inn og sammenligne svar fra både daglig leder og styreleder i selskapene. Vi vil derfor om det er mulig be om e-mail adressen til styreleder i ditt selskap for evt. å ha mulighet til å be vedkommende om å besvare et utfyllende spørreskjema. (Vi vil ikke gjøre din styreleder kjent med dine svar.)

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